

**APPENDIX C**

**ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) BY PLOT FOR ECOLOGICAL SITES, WOODLAND AND TAME PASTURE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007**

<b>Ecological Group And Site</b>	<b>Table</b>	<b>Page</b>
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**Footnotes for the tables in Appendix C:**

Binomials follow Great Plains Flora Association (1986).

Production samples were harvested in a 0.25 m<sup>2</sup> quadrat (0.5 x 0.5 meter square) centered at each plot location, dried to constant weight and weighed in the laboratory, and converted to grams per square meter for the tables in Appendix C.

**Notes:**

At sample sites affected by substantial livestock grazing (*i.e.*, utilization was greater than about 50 percent), production plots were not clipped, therefore overall baseline production sampling (n=121) was somewhat less than canopy coverage sampling (n=187). Low shrubs, but not tall shrubs, were harvested for annual production data.

n = Number of Samples

NPG (c) = Native Perennial Grass (cool season)

NPG (w) = Native Perennial Grass (warm season)

TABLE C1

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 9 PLOTS IN THE SALINE  
LOWLAND - WET LAND - SUBIRRIGATED COMPLEX ECOLOGICAL SITES – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	SALINE LOWLAND - WET LAND - SUBIRRIGATED									
	PLOT NUMBER									Mean
	SL-1	SL-2	SL-3	SL-4	SL-5	SL-6	SL-7	SL-8	SL-9	n=9
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>										
Carex praegracilis				97.16						10.80
Eleocharis xyridiformis				7.52						0.84
Hordeum jubatum				8.20						0.91
Poa glaucifolia				4.84					34.40	4.36
Puccinellia cusickii			310.96							34.55
Puccinellia nuttalliana	2.36						54.80	34.20	157.88	27.69
<b>Total NPG(c)</b>	<b>2.36</b>	<b>0.00</b>	<b>310.96</b>	<b>117.72</b>	<b>0.00</b>	<b>0.00</b>	<b>54.80</b>	<b>34.20</b>	<b>192.28</b>	<b>79.15</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>										
Distichlis spicata	92.80	101.88		6.40			4.00	3.56	115.52	36.02
Spartina pectinata				99.44		613.76				79.24
<b>Total NPG(w)</b>	<b>92.80</b>	<b>101.88</b>	<b>0.00</b>	<b>105.84</b>	<b>0.00</b>	<b>613.76</b>	<b>4.00</b>	<b>3.56</b>	<b>115.52</b>	<b>115.26</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>95.16</b>	<b>101.88</b>	<b>310.96</b>	<b>223.56</b>	<b>0.00</b>	<b>613.76</b>	<b>58.80</b>	<b>37.76</b>	<b>307.80</b>	<b>194.41</b>
<b>INTRODUCED PERENNIAL GRASS</b>	24.44				252.84			3.44		31.19
<b>TOTAL PERENNIAL GRASS</b>	<b>119.60</b>	<b>101.88</b>	<b>310.96</b>	<b>223.56</b>	<b>252.84</b>	<b>613.76</b>	<b>58.80</b>	<b>41.20</b>	<b>307.80</b>	<b>225.60</b>
<b>NATIVE ANNUAL GRASS</b>										
<b>INTRODUCED ANNUAL GRASS</b>										
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>										
<b>INTRODUCED PERENNIAL FORBS</b>										
<b>TOTAL PERENNIAL FORBS</b>	<b>9.52</b>	<b>0.00</b>	<b>0.00</b>	<b>48.44</b>	<b>104.04</b>	<b>0.00</b>	<b>22.20</b>	<b>7.64</b>	<b>0.00</b>	<b>21.32</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>										
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>										
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>7.92</b>	<b>55.84</b>	<b>71.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>17.30</b>
<b>TOTAL HERBACEOUS</b>	<b>137.04</b>	<b>178.64</b>	<b>381.96</b>	<b>272.00</b>	<b>356.88</b>	<b>613.76</b>	<b>81.00</b>	<b>48.84</b>	<b>307.80</b>	<b>264.21</b>
<b>SHRUBS</b>										
Symphoricarpos occidentalis					83.44					9.27
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>83.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.27</b>
<b>TOTAL</b>	<b>137.04</b>	<b>178.64</b>	<b>381.96</b>	<b>272.00</b>	<b>440.32</b>	<b>613.76</b>	<b>81.00</b>	<b>48.84</b>	<b>307.80</b>	<b>273.48</b>

Footnotes given on index page C-i.

TABLE C2

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 5 PLOTS IN THE LOAMY OVERFLOW - SUBIRRIGATED - WET LAND COMPLEX AND WET LAND - WET MEADOW COMPLEX ECOLOGICAL SITES – VEGETATION STUDY AREA  
STARK COUNTY, ND, 2006-2007

	LyOv- Sb-WL	WET LAND - WET MEADOW					WET LAND COMPOSITE
	PLOT	PLOT NUMBER				Mean	Mean
	WL-1	WL-7	WL-8	WL-11	WL-12	n=4	n=5
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>							
Carex aquatilis	348.44						69.69
Carex laeviconica		66.12	489.08	223.08		194.57	155.66
Carex lanuginosa					39.16	9.79	7.83
Eleocharis xyridiformis		189.16				47.29	37.83
Hordeum jubatum				29.12		7.28	5.82
<b>Total NPG(c)</b>	<b>348.44</b>	<b>255.28</b>	<b>489.08</b>	<b>252.20</b>	<b>39.16</b>	<b>258.93</b>	<b>276.83</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>							
Spartina pectinata					557.80	139.45	111.56
<b>Total NPG(w)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>557.80</b>	<b>139.45</b>	<b>111.56</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>348.44</b>	<b>255.28</b>	<b>489.08</b>	<b>252.20</b>	<b>596.96</b>	<b>398.38</b>	<b>388.39</b>
<b>INTRODUCED PERENNIAL GRASS</b>							
<b>TOTAL PERENNIAL GRASS</b>	<b>348.44</b>	<b>255.28</b>	<b>489.08</b>	<b>252.20</b>	<b>596.96</b>	<b>398.38</b>	<b>388.39</b>
<b>NATIVE ANNUAL GRASS</b>							
<b>INTRODUCED ANNUAL GRASS</b>							
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>		141.12			385.88	131.75	105.40
<b>INTRODUCED PERENNIAL FORBS</b>							
<b>TOTAL PERENNIAL FORBS</b>	<b>0.00</b>	<b>141.12</b>	<b>0.00</b>	<b>0.00</b>	<b>385.88</b>	<b>131.75</b>	<b>105.40</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>							
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>				0.76		0.19	0.15
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.76</b>	<b>0.00</b>	<b>0.19</b>	<b>0.15</b>
<b>TOTAL HERBACEOUS</b>	<b>348.44</b>	<b>396.40</b>	<b>489.08</b>	<b>252.96</b>	<b>982.84</b>	<b>530.32</b>	<b>493.94</b>
<b>SHRUBS</b>							
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>348.44</b>	<b>396.40</b>	<b>489.08</b>	<b>252.96</b>	<b>982.84</b>	<b>530.32</b>	<b>493.94</b>

Footnotes given on index page C-i.

TABLE C3

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 10 PLOTS IN THE RIPARIAN WOODLAND VEGETATION TYPE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	RIPARIAN WOODLAND										
	PLOT NUMBER										Mean
	RW-4	RW-8	RW-11	RW-12	RW-13	RW-14	RW-15	RW-23	RW-24	RW-30	n=10
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>											
Total NPG(c)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>											
Total NPG(w)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NATIVE PERENNIAL GRASS (Total)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INTRODUCED PERENNIAL GRASS	582.00	513.72	290.68	325.76	196.12	552.80	527.48	274.64	328.96	336.72	392.89
<b>TOTAL PERENNIAL GRASS</b>	<b>582.00</b>	<b>513.72</b>	<b>290.68</b>	<b>325.76</b>	<b>196.12</b>	<b>552.80</b>	<b>527.48</b>	<b>274.64</b>	<b>328.96</b>	<b>336.72</b>	<b>392.89</b>
<b>NATIVE ANNUAL GRASS</b>											
INTRODUCED ANNUAL GRASS											
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>											
INTRODUCED PERENNIAL FORBS	70.64						3.60				0.36
<b>TOTAL PERENNIAL FORBS</b>	<b>70.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7.42</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>											
INTRODUCED ANNUAL/BIENNIAL FORBS		7.44	17.28							12.36	1.24
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>7.44</b>	<b>17.28</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>12.36</b>	<b>3.71</b>
<b>TOTAL HERBACEOUS</b>	<b>652.64</b>	<b>521.16</b>	<b>307.96</b>	<b>325.76</b>	<b>196.12</b>	<b>552.80</b>	<b>531.08</b>	<b>274.64</b>	<b>328.96</b>	<b>349.08</b>	<b>404.02</b>
<b>SHRUBS</b>											
Symphoricarpos occidentalis						16.88	20.40				3.73
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.88</b>	<b>20.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.73</b>
<b>TOTAL</b>	<b>652.64</b>	<b>521.16</b>	<b>307.96</b>	<b>325.76</b>	<b>196.12</b>	<b>569.68</b>	<b>551.48</b>	<b>274.64</b>	<b>328.96</b>	<b>349.08</b>	<b>407.75</b>

Footnotes given on index page C-i.

TABLE C4

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 2 PLOTS IN THE SHALLOW CLAYEY, 14 PLOTS IN THE SHALLOW LOAMY AND 2 PLOTS IN THE SHALLOW SANDY ECOLOGICAL SITES – VEGETATION STUDY AREA STARK COUNTY, ND, 2006-2007

	SHALLOW CLAYEY			SHALLOW LOAMY											
	PLOT		Mean	PLOT NUMBER											
	SwCy-1	SwCy-2	n=2	SwLy-1	SwLy-2	SwLy-3	SwLy-4	SwLy-5	SwLy-7	SwLy-8	SwLy-10	SwLy-11	SwLy-12	SwLy-13	SwLy-14
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>															
Agropyron dasystachyum		5.40	2.70		3.88					3.64	19.16				10.96
Agropyron smithii				45.64	27.12	15.72	15.80	11.76	45.16				35.16	54.16	
Calamagrostis montanensis							6.04								
Carex eleocharis					3.68	0.32		0.68	7.12					0.84	
Carex filifolia	8.40	30.36	19.38	36.60			40.80	1.16	24.68	12.92	27.08	16.92		4.04	24.08
Carex heliophila									17.16	5.72	26.44	12.24			
Koeleria pyramidata	0.64	0.96	0.80	3.04	10.56	7.52	4.92	12.32	0.32	3.64	1.08	15.72	4.12	13.20	9.08
Poa sandbergii					0.20			0.28							
Stipa comata		22.12	11.06	4.84	7.20		16.00		63.32	10.16	32.80	9.76	1.92	27.64	12.28
Stipa viridula						11.40									39.88
<b>Total NPG(c)</b>	<b>9.04</b>	<b>58.84</b>	<b>33.94</b>	<b>90.12</b>	<b>52.64</b>	<b>34.96</b>	<b>83.56</b>	<b>26.20</b>	<b>157.76</b>	<b>36.08</b>	<b>106.56</b>	<b>54.64</b>	<b>41.20</b>	<b>99.88</b>	<b>96.28</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>															
Andropogon scoparius										20.08					
Bouteloua gracilis	4.48	4.92	4.70	45.68	7.44	14.88	18.24	15.48	7.52		5.40		27.52	27.40	3.00
Buchloe dactyloides					11.64	6.80		10.72							
Calamovilfa longifolia	81.64		40.82									23.96			
Muhlenbergia cuspidata		0.28	0.14							9.72			2.28		10.16
<b>Total NPG(w)</b>	<b>86.12</b>	<b>5.20</b>	<b>45.66</b>	<b>45.68</b>	<b>19.08</b>	<b>21.68</b>	<b>18.24</b>	<b>26.20</b>	<b>7.52</b>	<b>29.80</b>	<b>5.40</b>	<b>23.96</b>	<b>29.80</b>	<b>27.40</b>	<b>13.16</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>95.16</b>	<b>64.04</b>	<b>79.60</b>	<b>135.80</b>	<b>71.72</b>	<b>56.64</b>	<b>101.80</b>	<b>52.40</b>	<b>165.28</b>	<b>65.88</b>	<b>111.96</b>	<b>78.60</b>	<b>71.00</b>	<b>127.28</b>	<b>109.44</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>41.56</b>	<b></b>	<b>20.78</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b>1.32</b>	<b>0.20</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b>0.28</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>136.72</b>	<b>64.04</b>	<b>100.38</b>	<b>135.80</b>	<b>71.72</b>	<b>56.64</b>	<b>101.80</b>	<b>52.40</b>	<b>166.60</b>	<b>66.08</b>	<b>111.96</b>	<b>78.60</b>	<b>71.00</b>	<b>127.28</b>	<b>109.72</b>
<b>NATIVE ANNUAL GRASS</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b>0.20</b>	<b>0.68</b>	<b></b>
<b>INTRODUCED ANNUAL GRASS</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.68</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>	<b>4.84</b>	<b>0.20</b>	<b>2.52</b>	<b>1.88</b>	<b>29.28</b>	<b>7.12</b>	<b>0.96</b>	<b>4.48</b>	<b>2.36</b>	<b>37.04</b>	<b>5.48</b>	<b>3.68</b>	<b>10.64</b>	<b>24.12</b>	<b>10.44</b>
<b>INTRODUCED PERENNIAL FORBS</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b>0.20</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>
<b>TOTAL PERENNIAL FORBS</b>	<b>4.84</b>	<b>0.20</b>	<b>2.52</b>	<b>1.88</b>	<b>29.28</b>	<b>7.32</b>	<b>0.96</b>	<b>4.48</b>	<b>2.36</b>	<b>37.04</b>	<b>5.48</b>	<b>3.68</b>	<b>10.64</b>	<b>24.12</b>	<b>10.44</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>	<b></b>	<b></b>	<b></b>	<b>0.68</b>	<b>0.76</b>	<b>0.20</b>	<b></b>	<b>1.96</b>	<b>0.20</b>	<b></b>	<b></b>	<b></b>	<b>1.64</b>	<b>2.72</b>	<b>0.20</b>
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b>0.20</b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>	<b></b>
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.68</b>	<b>0.76</b>	<b>0.20</b>	<b>0.00</b>	<b>1.96</b>	<b>0.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.64</b>	<b>2.72</b>	<b>0.20</b>
<b>TOTAL HERBACEOUS</b>	<b>141.56</b>	<b>64.24</b>	<b>102.90</b>	<b>138.36</b>	<b>101.76</b>	<b>64.16</b>	<b>102.76</b>	<b>58.84</b>	<b>169.36</b>	<b>103.12</b>	<b>117.44</b>	<b>82.28</b>	<b>83.48</b>	<b>154.80</b>	<b>120.36</b>
<b>SHRUBS</b>															
Rosa arkansana									2.44	0.64	5.96				
Rosa woodsii	8.84		4.42												
<b>TOTAL SHRUBS</b>	<b>8.84</b>	<b>0.00</b>	<b>4.42</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.44</b>	<b>0.64</b>	<b>5.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>150.40</b>	<b>64.24</b>	<b>107.32</b>	<b>138.36</b>	<b>101.76</b>	<b>64.16</b>	<b>102.76</b>	<b>58.84</b>	<b>169.36</b>	<b>105.56</b>	<b>118.08</b>	<b>88.24</b>	<b>83.48</b>	<b>154.80</b>	<b>120.36</b>

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TABLE C4

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 2 PLOTS IN THE SHALLOW CLAYEY, 14 PLOTS IN THE SHALLOW LOAMY AND 2 PLOTS IN THE SHALLOW SANDY ECOLOGICAL SITES – VEGETATION STUDY AREA STARK COUNTY, ND, 2006-2007

	SHALLOW LOAMY			SHALLOW SANDY		
	PLOT		Mean	PLOT		Mean
	SwLy-15	SwLy-16	n=14	SwSy-1	SwSy-2	n=2
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>						
Agropyron dasystachyum	5.24	2.48	3.24	7.36		3.68
Agropyron smithii			17.89		27.76	13.88
Calamagrostis montanensis	2.16	2.24	0.75	1.84	3.36	2.60
Carex eleocharis			0.90	4.80	13.28	9.04
Carex filifolia	48.52		16.91			
Carex heliophila			4.40		0.48	0.24
Koeleria pyramidata		18.24	7.41	19.76		9.88
Poa sandbergii			0.03			
Stipa comata	61.16	24.28	19.38	7.00	60.76	33.88
Stipa viridula			3.66			
<b>Total NPG(c)</b>	<b>117.08</b>	<b>47.24</b>	<b>74.59</b>	<b>40.76</b>	<b>105.64</b>	<b>73.20</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>						
Andropogon scoparius		55.12	5.37			
Bouteloua gracilis	0.72	9.68	13.07	20.48	11.44	15.96
Buchloe dactyloides			2.08			
Calamovilfa longifolia	24.28		3.45	27.52	9.92	18.72
Muhlenbergia cuspidata		19.64	2.99			
<b>Total NPG(w)</b>	<b>25.00</b>	<b>84.44</b>	<b>26.95</b>	<b>48.00</b>	<b>21.36</b>	<b>34.68</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>142.08</b>	<b>131.68</b>	<b>101.54</b>	<b>88.76</b>	<b>127.00</b>	<b>107.88</b>
<b>INTRODUCED PERENNIAL GRASS</b>			<b>0.13</b>			
<b>TOTAL PERENNIAL GRASS</b>	<b>142.08</b>	<b>131.68</b>	<b>101.67</b>	<b>88.76</b>	<b>127.00</b>	<b>107.88</b>
<b>NATIVE ANNUAL GRASS</b>			<b>0.06</b>			
<b>INTRODUCED ANNUAL GRASS</b>						
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>	5.48	10.28	10.95	7.20	4.08	5.64
<b>INTRODUCED PERENNIAL FORBS</b>			<b>0.01</b>			
<b>TOTAL PERENNIAL FORBS</b>	<b>5.48</b>	<b>10.28</b>	<b>10.96</b>	<b>7.20</b>	<b>4.08</b>	<b>5.64</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>			<b>0.60</b>			
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>			<b>0.01</b>			
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.61</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL HERBACEOUS</b>	<b>147.56</b>	<b>141.96</b>	<b>113.30</b>	<b>95.96</b>	<b>131.08</b>	<b>113.52</b>
<b>SHRUBS</b>						
Rosa arkansana			0.65			
Rosa woodsii						
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.65</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>147.56</b>	<b>141.96</b>	<b>113.95</b>	<b>95.96</b>	<b>131.08</b>	<b>113.52</b>

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TABLE C5

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 1 PLOT IN THE CLAYPAN AND 14 PLOTS IN THE THIN CLAYPAN ECOLOGICAL SITES –  
VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	CLAYPAN	THIN CLAYPAN														Mean n=14
	PLOT	PLOT NUMBER														
	Cp-1	TcP-1	TcP-2	TcP-3	TcP-4	TcP-5	TcP-6	TcP-7	TcP-9	TcP-10	TcP-11	TcP-12	TcP-13	TcP-15	TcP-16	
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																
Agropyron dasystachyum		0.76				16.52	3.08			0.88						1.52
Agropyron smithii		9.40			23.08	38.56	122.72	30.80	55.76	73.32	43.40	52.28	23.36	3.04	56.60	38.02
Agropyron trachycaulum			17.16													1.23
Calamagrostis montanensis					1.52								0.32			0.13
Carex cleocharis		1.04		0.20		2.92	3.52		12.72		1.56	11.08	16.60		1.92	3.68
Hordeum jubatum	99.20															
Koeleria pyramidata		0.36			11.48	4.44		0.88	0.72			4.28	24.96	0.36	2.64	3.58
Poa glaucifolia	50.68															
Poa sandbergii		0.20				1.92	32.80		107.96	36.36	0.60	1.84	1.64			13.09
Puccinellia nuttalliana	13.44		5.36													0.38
Stipa comata												4.08				0.29
Stipa viridula				0.60	3.20			43.60				21.56	30.60			7.11
<b>Total NPG(c)</b>	<b>163.32</b>	<b>11.76</b>	<b>22.52</b>	<b>0.80</b>	<b>39.28</b>	<b>64.36</b>	<b>162.12</b>	<b>75.28</b>	<b>177.16</b>	<b>110.56</b>	<b>45.56</b>	<b>91.04</b>	<b>101.56</b>	<b>3.40</b>	<b>61.16</b>	<b>69.04</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																
Bouteloua gracilis		2.32		0.20	9.16	7.56	10.56		0.40	0.80	20.28	3.16	14.88	1.32		5.05
Buchloe dactyloides		66.88					2.96	18.60	31.76		5.96	23.00			26.44	12.54
Distichlis spicata	46.44			36.36										37.52		5.28
Muhlenbergia cuspidata					18.52											1.32
Schedonnardus paniculatus				0.28												0.02
<b>Total NPG(w)</b>	<b>46.44</b>	<b>69.20</b>	<b>0.00</b>	<b>36.84</b>	<b>27.68</b>	<b>7.56</b>	<b>13.52</b>	<b>18.60</b>	<b>32.16</b>	<b>0.80</b>	<b>26.24</b>	<b>26.16</b>	<b>14.88</b>	<b>38.84</b>	<b>26.44</b>	<b>24.21</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>209.76</b>	<b>80.96</b>	<b>22.52</b>	<b>37.64</b>	<b>66.96</b>	<b>71.92</b>	<b>175.64</b>	<b>93.88</b>	<b>209.32</b>	<b>111.36</b>	<b>71.80</b>	<b>117.20</b>	<b>116.44</b>	<b>42.24</b>	<b>87.60</b>	<b>93.25</b>
<b>INTRODUCED PERENNIAL GRASS</b>				28.04	4.56	0.36	3.96	2.48	25.08	3.16						4.83
<b>TOTAL PERENNIAL GRASS</b>	<b>209.76</b>	<b>80.96</b>	<b>22.52</b>	<b>65.68</b>	<b>66.96</b>	<b>76.48</b>	<b>176.00</b>	<b>97.84</b>	<b>211.80</b>	<b>136.44</b>	<b>74.96</b>	<b>117.20</b>	<b>116.44</b>	<b>42.24</b>	<b>87.60</b>	<b>98.08</b>
<b>NATIVE ANNUAL GRASS</b>																
<b>INTRODUCED ANNUAL GRASS</b>										6.76						0.48
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.76</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.48</b>
<b>NATIVE PERENNIAL FORBS</b>		5.52		4.88	14.04	26.52	14.64	8.32	15.16	19.32	10.92	9.64	11.68		17.32	11.28
<b>INTRODUCED PERENNIAL FORBS</b>						2.32	10.40	1.12	2.28	3.64						1.41
<b>TOTAL PERENNIAL FORBS</b>	<b>0.00</b>	<b>5.52</b>	<b>0.00</b>	<b>4.88</b>	<b>14.04</b>	<b>28.84</b>	<b>25.04</b>	<b>9.44</b>	<b>17.44</b>	<b>22.96</b>	<b>10.92</b>	<b>9.64</b>	<b>11.68</b>	<b>0.00</b>	<b>17.32</b>	<b>12.69</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>						6.72	4.28	12.20	6.76	9.96	0.48	0.36		3.24	5.44	3.53
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>			3.52			4.44	8.40		9.80	7.92						2.43
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>3.52</b>	<b>0.00</b>	<b>0.00</b>	<b>11.16</b>	<b>12.68</b>	<b>12.20</b>	<b>16.56</b>	<b>17.88</b>	<b>0.48</b>	<b>0.36</b>	<b>0.00</b>	<b>3.24</b>	<b>5.44</b>	<b>5.97</b>
<b>TOTAL HERBACEOUS</b>	<b>209.76</b>	<b>86.48</b>	<b>26.04</b>	<b>70.56</b>	<b>81.00</b>	<b>116.48</b>	<b>213.72</b>	<b>119.48</b>	<b>245.80</b>	<b>184.04</b>	<b>86.36</b>	<b>127.20</b>	<b>128.12</b>	<b>45.48</b>	<b>110.36</b>	<b>117.22</b>
<b>SHRUBS</b>																
Artemisia cana		11.92								7.52						1.39
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>11.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7.52</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.39</b>
<b>TOTAL</b>	<b>209.76</b>	<b>98.40</b>	<b>26.04</b>	<b>70.56</b>	<b>81.00</b>	<b>116.48</b>	<b>213.72</b>	<b>119.48</b>	<b>245.80</b>	<b>191.56</b>	<b>86.36</b>	<b>127.20</b>	<b>128.12</b>	<b>45.48</b>	<b>110.36</b>	<b>118.61</b>

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TABLE C6

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 5 PLOTS IN THE SANDY ECOLOGICAL SITE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	SANDY					
	PLOT NUMBER					Mean n=5
	Sy-1	Sy-2	Sy-3	Sy-4	Sy-5	
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>						
Agropyron dasystachyum				0.96	22.36	4.66
Agropyron smithii	10.44	0.56	3.12	6.00		4.02
Calamagrostis montanensis		3.08	2.72			1.16
Carex eleocharis	1.60		8.04	0.64		2.06
Carex filifolia		8.52	3.40	25.36		7.46
Carex heliophila		1.64	17.64		66.28	17.11
Koeleria pyramidata	12.36			8.48		4.17
Stipa comata	12.04	8.24	66.64	28.32	2.56	23.56
Stipa viridula	6.12		0.16			1.26
<b>Total NPG(c)</b>	<b>42.56</b>	<b>22.04</b>	<b>101.72</b>	<b>69.76</b>	<b>91.20</b>	<b>65.46</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>						
Bouteloua gracilis		8.72	3.52	14.52		5.35
Buchloe dactyloides	41.48					8.30
Calamovilfa longifolia		22.16	8.32		32.12	12.52
<b>Total NPG(w)</b>	<b>41.48</b>	<b>30.88</b>	<b>11.84</b>	<b>14.52</b>	<b>32.12</b>	<b>26.17</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>84.04</b>	<b>52.92</b>	<b>113.56</b>	<b>84.28</b>	<b>123.32</b>	<b>91.62</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>23.20</b>			<b>0.48</b>	<b>25.80</b>	<b>9.90</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>107.24</b>	<b>52.92</b>	<b>113.56</b>	<b>84.76</b>	<b>149.12</b>	<b>101.52</b>
<b>NATIVE ANNUAL GRASS</b>						
<b>INTRODUCED ANNUAL GRASS</b>						
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>		42.32	68.12	5.12	11.96	25.50
<b>INTRODUCED PERENNIAL FORBS</b>				2.16		0.43
<b>TOTAL PERENNIAL FORBS</b>	<b>0.00</b>	<b>42.32</b>	<b>68.12</b>	<b>7.28</b>	<b>11.96</b>	<b>25.94</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>						
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>				0.44		0.09
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.44</b>	<b>0.00</b>	<b>0.09</b>
<b>TOTAL HERBACEOUS</b>	<b>107.24</b>	<b>95.24</b>	<b>181.68</b>	<b>92.48</b>	<b>161.08</b>	<b>127.54</b>
<b>SHRUBS</b>						
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>107.24</b>	<b>95.24</b>	<b>181.68</b>	<b>92.48</b>	<b>161.08</b>	<b>127.54</b>

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TABLE C7

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR EIGHT PLOTS IN THE CLAYEY ECOLOGICAL SITE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	CLAYEY								Mean n=8
	PLOT NUMBER								
	Cy-1	Cy-2	Cy-3	Cy-4	Cy-5	Cy-6	Cy-7	Cy-8	
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>									
Agropyron smithii	51.48	173.76	34.08	151.48	38.88	39.36	87.20	74.12	81.30
Calamagrostis montanensis			0.96						0.12
Carex eleocharis	5.60		6.72		0.64	1.32	0.84		1.89
Koeleria pyramidata	0.96		3.88		4.92	0.52		10.52	2.60
Poa sandbergii	3.56	0.72		0.16	0.76	2.52			0.97
Stipa comata			12.72		0.76			18.68	4.02
Stipa viridula	3.72	1.04	27.36						4.02
<b>Total NPG(c)</b>	<b>65.32</b>	<b>175.52</b>	<b>85.72</b>	<b>151.64</b>	<b>45.96</b>	<b>43.72</b>	<b>88.04</b>	<b>103.32</b>	<b>94.91</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>									
Bouteloua gracilis	3.76			8.60	5.20	57.52	0.56	18.60	11.78
Buchloe dactyloides	9.36			8.96	31.44				6.22
Distichlis spicata						54.52			6.82
Schedonnardus paniculatus		1.56	0.80						0.30
Spartina pectinata								0.20	0.03
<b>Total NPG(w)</b>	<b>13.12</b>	<b>1.56</b>	<b>0.80</b>	<b>17.56</b>	<b>36.64</b>	<b>112.04</b>	<b>0.56</b>	<b>18.80</b>	<b>25.14</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>78.44</b>	<b>177.08</b>	<b>86.52</b>	<b>169.20</b>	<b>82.60</b>	<b>155.76</b>	<b>88.60</b>	<b>122.12</b>	<b>120.04</b>
<b>INTRODUCED PERENNIAL GRASS</b>			12.96		11.96		62.56		10.94
<b>TOTAL PERENNIAL GRASS</b>	<b>78.44</b>	<b>177.08</b>	<b>99.48</b>	<b>169.20</b>	<b>94.56</b>	<b>155.76</b>	<b>151.16</b>	<b>122.12</b>	<b>130.98</b>
<b>NATIVE ANNUAL GRASS</b>						0.20		1.40	0.20
<b>INTRODUCED ANNUAL GRASS</b>									
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.00</b>	<b>1.40</b>	<b>0.20</b>
<b>NATIVE PERENNIAL FORBS</b>	33.96		20.04		2.12	0.96	11.80	0.52	8.68
<b>INTRODUCED PERENNIAL FORBS</b>		0.20	0.60						0.10
<b>TOTAL PERENNIAL FORBS</b>	<b>33.96</b>	<b>0.20</b>	<b>20.64</b>	<b>0.00</b>	<b>2.12</b>	<b>0.96</b>	<b>11.80</b>	<b>0.52</b>	<b>8.78</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>	1.64	0.20	1.48	0.16	22.64	2.88	7.36	0.36	4.59
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>			1.88						0.24
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>1.64</b>	<b>0.20</b>	<b>3.36</b>	<b>0.16</b>	<b>22.64</b>	<b>2.88</b>	<b>7.36</b>	<b>0.36</b>	<b>4.83</b>
<b>TOTAL HERBACEOUS</b>	<b>114.04</b>	<b>177.48</b>	<b>123.48</b>	<b>169.36</b>	<b>119.32</b>	<b>159.80</b>	<b>170.32</b>	<b>124.40</b>	<b>144.78</b>
<b>SHRUBS</b>									
Artemisia cana				5.04		1.88	16.84		2.97
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5.04</b>	<b>0.00</b>	<b>1.88</b>	<b>16.84</b>	<b>0.00</b>	<b>2.97</b>
<b>TOTAL</b>	<b>114.04</b>	<b>177.48</b>	<b>123.48</b>	<b>174.40</b>	<b>119.32</b>	<b>161.68</b>	<b>187.16</b>	<b>124.40</b>	<b>147.75</b>

Footnotes given on index page C-i.

TABLE C8

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 2 PLOTS IN THE LOAMY AND 1 PLOT IN THE LOAMY OVERFLOW ECOLOGICAL SITES –  
 VEGETATION STUDY AREA  
 STARK COUNTY, NORTH DAKOTA, 2006-2007

	LOAMY			LOAMY OVERFLOW
	PLOT NUMBER		Mean	PLOT
	Ly-1	Ly-2	n=2	LyOv-1
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>				
Agropyron smithii	117.32	80.60	98.96	
Carex eleocharis	13.96		6.98	
Carex filifolia		13.44	6.72	
Poa sandbergii		0.96	0.48	
Stipa comata		1.64	0.82	
<b>Total NPG(c)</b>	<b>131.28</b>	<b>96.64</b>	<b>113.96</b>	<b>0.00</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>				
Bouteloua gracilis	57.40	47.56	52.48	
Muhlenbergia cuspidata		1.96	0.98	
<b>Total NPG(w)</b>	<b>57.40</b>	<b>49.52</b>	<b>53.46</b>	<b>0.00</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>188.68</b>	<b>146.16</b>	<b>167.42</b>	<b>0.00</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>104.08</b>		<b>52.04</b>	<b>506.72</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>292.76</b>	<b>146.16</b>	<b>219.46</b>	<b>506.72</b>
<b>NATIVE ANNUAL GRASS</b>				
<b>INTRODUCED ANNUAL GRASS</b>				
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>				
<b>INTRODUCED PERENNIAL FORBS</b>		1.32	0.66	26.84
<b>TOTAL PERENNIAL FORBS</b>	<b>0.00</b>	<b>1.32</b>	<b>0.66</b>	<b>26.84</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>				
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>	0.24	0.60	0.42	
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>3.52</b>	<b>0.60</b>	<b>2.18</b>	<b>0.00</b>
<b>TOTAL HERBACEOUS</b>	<b>296.52</b>	<b>148.08</b>	<b>222.30</b>	<b>533.56</b>
<b>SHRUBS</b>				
Symphoricarpos occidentalis				143.44
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>143.44</b>
<b>TOTAL</b>	<b>296.52</b>	<b>148.08</b>	<b>222.30</b>	<b>677.00</b>

Footnotes given on index page C-i.

TABLE C9

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 12 PLOTS IN THE LOAMY TERRACE AND 2 PLOTS IN THE LOAMY TERRACE (OCCASIONALLY CLAYEY TERRACE) ECOLOGICAL SITES – VEGETATION STUDY AREA  
STARK COUNTY, ND, 2006-2007

	LOAMY TERRACE												LOAMY TERRACE (occasionally CLAYEY TERRACE)					
	PLOT NUMBER											Mean n=12	PLOT		Mean n=2			
	LyT-5	LyT-7	LyT-8	LyT-9	LyT-12	LyT-13	LyT-14	LyT-15	LyT-16	LyT-18	LyT-19		LyT-21	LyT-24		LyT-25		
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																		
Agropyron dasystachyum		37.04								21.60				4.89				
Agropyron smithii	4.64	54.28	44.80	252.24	335.08	74.08	138.68	75.52	38.96	12.68	13.76	44.40	90.76		4.64	2.32		
Agropyron trachycaulum									19.28				1.61					
Calamagrostis montanensis	1.96							0.76					0.23					
Carex eleocharis	4.36	0.48	14.36	0.68	0.44	2.44	6.92	11.04				1.00	3.48					
Carex filifolia											0.28		0.02					
Carex laeviconica														273.12		136.56		
Koeleria pyramidata		2.68				3.12		11.52		1.52	24.80	2.24	3.82					
Poa sandbergii		5.12				0.88	1.68			12.88	0.20		1.73					
Stipa comata	25.20		13.72				4.44				1.36	0.72	3.79					
Stipa viridula	50.76			4.00		3.08		54.36	15.00	2.08		48.32	14.80					
<b>Total NPG(c)</b>	<b>86.92</b>	<b>99.60</b>	<b>72.88</b>	<b>256.92</b>	<b>335.52</b>	<b>83.60</b>	<b>151.72</b>	<b>153.20</b>	<b>73.24</b>	<b>50.76</b>	<b>40.40</b>	<b>96.68</b>	<b>125.12</b>	<b>273.12</b>	<b>4.64</b>	<b>138.88</b>		
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																		
Bouteloua gracilis	1.00	67.92	12.96			15.24	41.92	27.64	0.48	0.56	23.92		15.97		7.64	3.82		
Calamovilfa longifolia	7.04												0.59					
Distichlis spicata											19.12		1.59					
Spartina pectinata														209.56		104.78		
<b>Total NPG(w)</b>	<b>8.04</b>	<b>67.92</b>	<b>12.96</b>	<b>0.00</b>	<b>0.00</b>	<b>15.24</b>	<b>41.92</b>	<b>27.64</b>	<b>0.48</b>	<b>0.56</b>	<b>43.04</b>	<b>0.00</b>	<b>18.15</b>	<b>209.56</b>	<b>7.64</b>	<b>108.60</b>		
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>94.96</b>	<b>167.52</b>	<b>85.84</b>	<b>256.92</b>	<b>335.52</b>	<b>98.84</b>	<b>193.64</b>	<b>180.84</b>	<b>73.72</b>	<b>51.32</b>	<b>83.44</b>	<b>96.68</b>	<b>143.27</b>	<b>482.68</b>	<b>12.28</b>	<b>247.48</b>		
<b>INTRODUCED PERENNIAL GRASS</b>	61.68	2.08	1.92	7.80	17.88		1.80	10.56	87.16			19.80	17.56	0.48	114.40	57.44		
<b>TOTAL PERENNIAL GRASS</b>	<b>156.64</b>	<b>169.60</b>	<b>87.76</b>	<b>264.72</b>	<b>353.40</b>	<b>98.84</b>	<b>195.44</b>	<b>191.40</b>	<b>160.88</b>	<b>51.32</b>	<b>83.44</b>	<b>116.48</b>	<b>160.83</b>	<b>483.16</b>	<b>126.68</b>	<b>304.92</b>		
<b>NATIVE ANNUAL GRASS</b>		0.40											0.03					
<b>INTRODUCED ANNUAL GRASS</b>																		
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.40</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		
<b>NATIVE PERENNIAL FORBS</b>	7.00		8.16	3.60			0.60		75.68	0.84	38.40	9.88	12.01		11.08	5.54		
<b>INTRODUCED PERENNIAL FORBS</b>									0.20				0.02		1.36	0.68		
<b>TOTAL PERENNIAL FORBS</b>	<b>7.00</b>	<b>0.00</b>	<b>8.16</b>	<b>3.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.60</b>	<b>0.00</b>	<b>75.88</b>	<b>0.84</b>	<b>38.40</b>	<b>9.88</b>	<b>12.03</b>	<b>0.00</b>	<b>12.44</b>	<b>6.22</b>		
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>		0.24		0.68			0.16		2.44	34.00	1.12		3.22					
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>		0.40				0.20			4.92	0.44			0.50		2.84	1.42		
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>0.00</b>	<b>0.64</b>	<b>0.00</b>	<b>0.68</b>	<b>0.00</b>	<b>0.20</b>	<b>0.16</b>	<b>0.00</b>	<b>7.36</b>	<b>34.44</b>	<b>1.12</b>	<b>0.00</b>	<b>3.72</b>	<b>0.00</b>	<b>2.84</b>	<b>1.42</b>		
<b>TOTAL HERBACEOUS</b>	<b>163.64</b>	<b>170.64</b>	<b>95.92</b>	<b>269.00</b>	<b>353.40</b>	<b>99.04</b>	<b>196.20</b>	<b>191.40</b>	<b>244.12</b>	<b>86.60</b>	<b>122.96</b>	<b>126.36</b>	<b>176.61</b>	<b>483.16</b>	<b>141.96</b>	<b>312.56</b>		
<b>SHRUBS</b>																		
Artemisia cana	29.60	38.28	39.60					13.68		5.44		24.72	12.61		5.04	2.52		
Rosa woodsii									3.48				0.29					
Symphoricarpos occidentalis									9.48			6.68	1.35		67.16	33.58		
<b>TOTAL SHRUBS</b>	<b>29.60</b>	<b>38.28</b>	<b>39.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.68</b>	<b>12.96</b>	<b>5.44</b>	<b>0.00</b>	<b>31.40</b>	<b>14.25</b>	<b>0.00</b>	<b>72.20</b>	<b>36.10</b>		
<b>TOTAL</b>	<b>193.24</b>	<b>208.92</b>	<b>135.52</b>	<b>269.00</b>	<b>353.40</b>	<b>99.04</b>	<b>196.20</b>	<b>205.08</b>	<b>257.08</b>	<b>92.04</b>	<b>122.96</b>	<b>157.76</b>	<b>190.85</b>	<b>483.16</b>	<b>214.16</b>	<b>348.66</b>		

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TABLE C10

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 34 PLOTS IN THE TAME PASTURE VEGETATION TYPE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	TAME PASTURE																	
	PLOT NUMBER																	
	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7	TP-9	TP-10	TP-11	TP-12	TP-13	TP-20	TP-21	TP-22	TP-23	TP-24	TP-25
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																		
Agropyron dasystachyum													1.00					
Agropyron smithii		31.84			11.60								276.00			16.96		
Agropyron trachycaulum													21.68			32.12		
Carex eleocharis		5.36				6.20												
Koeleria pyramidata					0.76													
Poa sandbergii		0.84																
Stipa comata																		
Stipa viridula					5.72													
<b>Total NPG(c)</b>	<b>0.00</b>	<b>38.04</b>	<b>0.00</b>	<b>0.00</b>	<b>18.08</b>	<b>6.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>298.68</b>	<b>0.00</b>	<b>0.00</b>	<b>49.08</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																		
Bouteloua gracilis						1.64										8.56		
Buchloe dactyloides		24.24			20.64	8.72												
Distichlis spicata			10.96															
Schedonnardus paniculatus	2.28																	
Sporobolus cryptandrus																		
<b>Total NPG(w)</b>	<b>2.28</b>	<b>24.24</b>	<b>10.96</b>	<b>0.00</b>	<b>20.64</b>	<b>10.36</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8.56</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>2.28</b>	<b>62.28</b>	<b>10.96</b>	<b>0.00</b>	<b>38.72</b>	<b>16.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>298.68</b>	<b>0.00</b>	<b>0.00</b>	<b>57.64</b>	<b>0.00</b>	<b>0.00</b>
<b>INTRODUCED PERENNIAL GRASS</b>	102.60	72.16	142.36	133.12	78.00	148.32	344.24	474.40	25.28	130.88	157.64	167.48	228.40	330.72	352.96	154.24	87.00	358.00
<b>TOTAL PERENNIAL GRASS</b>	<b>104.88</b>	<b>134.44</b>	<b>153.32</b>	<b>133.12</b>	<b>116.72</b>	<b>164.88</b>	<b>344.24</b>	<b>474.40</b>	<b>25.28</b>	<b>130.88</b>	<b>157.64</b>	<b>167.48</b>	<b>527.08</b>	<b>330.72</b>	<b>352.96</b>	<b>211.88</b>	<b>87.00</b>	<b>358.00</b>
<b>NATIVE ANNUAL GRASS</b>																		
<b>INTRODUCED ANNUAL GRASS</b>																		
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>																		
<b>INTRODUCED PERENNIAL FORBS</b>																		
<b>TOTAL PERENNIAL FORBS</b>	3.92		0.52	12.12	0.64				114.24	2.84		0.72	20.44				0.56	
			0.20	0.20					2.96	2.32			0.32					
<b>TOTAL PERENNIAL FORBS</b>	<b>3.92</b>	<b>0.00</b>	<b>0.72</b>	<b>12.32</b>	<b>0.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>114.24</b>	<b>5.80</b>	<b>2.32</b>	<b>0.72</b>	<b>20.76</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.56</b>	<b>0.00</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>																		
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>																		
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	3.96					0.16			18.48	0.24								
								0.20	1.80	0.72								
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>3.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.16</b>	<b>0.00</b>	<b>0.20</b>	<b>20.28</b>	<b>0.24</b>	<b>0.72</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL HERBACEOUS</b>	<b>112.76</b>	<b>134.44</b>	<b>154.04</b>	<b>145.44</b>	<b>117.36</b>	<b>165.04</b>	<b>344.24</b>	<b>474.60</b>	<b>159.80</b>	<b>136.92</b>	<b>160.68</b>	<b>168.20</b>	<b>547.84</b>	<b>330.72</b>	<b>352.96</b>	<b>211.88</b>	<b>87.56</b>	<b>358.00</b>
<b>SHRUBS</b>																		
Rosa woodsii									1.56									
Symphoricarpos occidentalis								46.32	349.92					1.52				8.84
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>47.88</b>	<b>349.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.52</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8.84</b>
<b>TOTAL</b>	<b>112.76</b>	<b>134.44</b>	<b>154.04</b>	<b>145.44</b>	<b>117.36</b>	<b>165.04</b>	<b>344.24</b>	<b>522.48</b>	<b>509.72</b>	<b>136.92</b>	<b>160.68</b>	<b>168.20</b>	<b>547.84</b>	<b>332.24</b>	<b>352.96</b>	<b>211.88</b>	<b>87.56</b>	<b>366.84</b>

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TABLE C10

ANNUAL ABOVE-GROUND PRODUCTION (GRAMS/M<sup>2</sup>) FOR 34 PLOTS IN THE TAME PASTURE VEGETATION TYPE – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

	TAME PASTURE																
	PLOT NUMBER																Mean
	TP-26	TP-27	TP-28	TP-30	TP-31	TP-34	TP-35	TP-36	TP-37	TP-38	TP-39	TP-40	TP-41	TP-42	TP-45	TP-47	n=34
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																	
Agropyron dasystachyum																	0.03
Agropyron smithii						4.64									1.04		10.06
Agropyron trachycalum																	1.58
Carex eleocharis							2.44						2.08			1.08	0.50
Koeleria pyramidata																	0.02
Poa sandbergii																	0.02
Stipa comata						18.72	49.56	3.96		126.56	5.04	12.48					6.36
Stipa viridula									18.04	20.56					4.52		1.52
<b>Total NPG(c)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>23.36</b>	<b>52.00</b>	<b>22.00</b>	<b>20.56</b>	<b>126.56</b>	<b>8.00</b>	<b>12.48</b>	<b>2.08</b>	<b>0.00</b>	<b>5.56</b>	<b>1.08</b>	<b>20.11</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																	
Bouteloua gracilis		9.00											7.08	4.12			0.89
Buchloe dactyloides					1.88										1.12	0.56	1.68
Distichlis spicata																	0.32
Schedonnardus paniculatus															1.84		0.12
Sporobolus cryptandrus									4.12	0.52							0.14
<b>Total NPG(w)</b>	<b>0.00</b>	<b>9.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.88</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.12</b>	<b>0.52</b>	<b>0.00</b>	<b>0.00</b>	<b>7.08</b>	<b>4.12</b>	<b>2.96</b>	<b>0.56</b>	<b>3.16</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>0.00</b>	<b>9.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.88</b>	<b>23.36</b>	<b>52.00</b>	<b>22.00</b>	<b>24.68</b>	<b>127.08</b>	<b>8.00</b>	<b>12.48</b>	<b>9.16</b>	<b>4.12</b>	<b>8.52</b>	<b>1.64</b>	<b>23.27</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>150.80</b>	<b>181.00</b>	<b>140.96</b>	<b>325.72</b>	<b>331.44</b>	<b>285.52</b>	<b>116.24</b>	<b>126.40</b>	<b>133.80</b>	<b>75.80</b>	<b>386.12</b>	<b>147.24</b>	<b>141.52</b>	<b>117.36</b>	<b>145.92</b>	<b>39.20</b>	<b>186.26</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>150.80</b>	<b>190.00</b>	<b>140.96</b>	<b>325.72</b>	<b>333.32</b>	<b>308.88</b>	<b>168.24</b>	<b>148.40</b>	<b>158.48</b>	<b>202.88</b>	<b>394.12</b>	<b>159.72</b>	<b>150.68</b>	<b>121.48</b>	<b>154.44</b>	<b>40.84</b>	<b>209.53</b>
<b>NATIVE ANNUAL GRASS</b>																	
<b>INTRODUCED ANNUAL GRASS</b>																	
<b>TOTAL ANNUAL GRASS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NATIVE PERENNIAL FORBS</b>																	
<b>INTRODUCED PERENNIAL FORBS</b>																	
<b>TOTAL PERENNIAL FORBS</b>	<b>0.00</b>	<b>0.00</b>	<b>16.52</b>	<b>0.00</b>	<b>0.68</b>	<b>0.00</b>	<b>4.12</b>	<b>0.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>14.80</b>	<b>0.00</b>	<b>5.87</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>																	
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>																	
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>3.64</b>	<b>0.20</b>	<b>0.92</b>	<b>0.44</b>	<b>0.00</b>	<b>7.96</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.14</b>
<b>TOTAL HERBACEOUS</b>	<b>154.44</b>	<b>190.20</b>	<b>158.40</b>	<b>326.16</b>	<b>334.00</b>	<b>316.84</b>	<b>172.36</b>	<b>148.84</b>	<b>158.48</b>	<b>203.08</b>	<b>395.08</b>	<b>159.72</b>	<b>150.68</b>	<b>121.48</b>	<b>169.24</b>	<b>40.84</b>	<b>216.54</b>
<b>SHRUBS</b>																	
Rosa woodsii																	0.05
Symphoricarpos occidentalis																	11.96
<b>TOTAL SHRUBS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>12.00</b>
<b>TOTAL</b>	<b>154.44</b>	<b>190.20</b>	<b>158.40</b>	<b>326.16</b>	<b>334.00</b>	<b>316.84</b>	<b>172.36</b>	<b>148.84</b>	<b>158.48</b>	<b>203.08</b>	<b>395.08</b>	<b>159.72</b>	<b>150.68</b>	<b>121.48</b>	<b>169.24</b>	<b>40.84</b>	<b>228.54</b>

Footnotes given on index page C-i.

TABLE C11

SUMMARY OF ANNUAL ABOVE-GROUND PRODUCTION (POUNDS/ACRE) FOR ECOLOGICAL SITES, RIPARIAN WOODLAND, AND TAME PASTURE SAMPLED - VEGETATION STUDY AREA STARK COUNTY, NORTH DAKOTA, 2006-2007

ECOLOGICAL SITE / VEGETATION TYPE

	Saline Lowland - Wet Land - Subirrigated n=9	Loamy Overflow - Subirrigated - Wet Land n=1	Wet Land - Wet Meadow n=4	Riparian Woodland n=10	Shallow Clayey n=2	Shallow Loamy n=14	Shallow Sandy n=2	Claypan n=1	Thin Claypan n=14	Sandy n=5	Clayey n=8	Loamy n=2	Loamy Overflow n=1	Loamy Terrace n=12	Loamy Terrace (occ. CyT) n=2	Loamy Terrace Composite n=14	Tame Pasture n=34
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																	
Agropyron dasystachyum					24.1	28.9	32.8		13.5	41.6				43.6		37.4	0.3
Agropyron smithii						159.7	123.9		339.3	35.9	725.4	883.1		809.9	20.7	697.2	89.8
Agropyron trachycaulum									10.9					14.3		12.3	14.1
Calamagrostis montanensis						6.7	23.2		1.2	10.4	1.1			2.0		1.7	
Carex aquatilis		3109.3															
Carex eleocharis						8.1	80.7		32.9	18.3	16.9	62.3		31.0		26.6	4.5
Carex filifolia					172.9	150.9				66.5		60.0		0.2		0.2	
Carex heliophila						39.2	2.1			152.7							
Carex laeviconica			1736.2												1218.6	174.1	
Carex lanuginosa			87.4														
Carex praegracilis	96.3																
Eleocharis xyridiformis	7.5		422.0														
Hordeum jubatum	8.1		65.0					885.2									
Koeleria pyramidata					7.1	66.1	88.2		31.9	37.2	23.2			34.1		29.2	0.2
Poa glaucifolia	38.9							452.2									
Poa sandbergii						0.3			116.8		8.6	4.3		15.4		13.2	0.2
Puccinellia cusickii	308.3																
Puccinellia nuttalliana	247.1							119.9	3.4								
Stipa comata					98.7	173.0	302.3		2.6	210.2	35.9	7.3		33.8		29.0	56.8
Stipa viridula						32.7			63.5	11.2	35.8			132.1		113.2	13.6
<b>Total NPG(c)</b>	<b>706.3</b>	<b>3109.3</b>	<b>2310.6</b>		<b>302.9</b>	<b>665.6</b>	<b>653.2</b>	<b>1457.4</b>	<b>616.1</b>	<b>584.1</b>	<b>846.9</b>	<b>1016.9</b>		<b>1116.5</b>	<b>1239.3</b>	<b>1134.0</b>	<b>179.5</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																	
Andropogon scoparius						47.9											
Bouteloua gracilis					41.9	116.6	142.4		45.0	47.8	105.1	468.3		142.5	34.1	127.0	8.0
Buchloe dactyloides						18.6			111.9	74.0	55.5						15.0
Calamovilfa longifolia					364.3	30.7	167.0			111.7				5.2		4.5	
Distichlis spicata	321.4							414.4	47.1		60.8			14.2		12.2	2.9
Muhlenbergia cuspidata					1.2	26.6			11.8			8.7					
Schedonnardus paniculatus									0.2		2.6						1.1
Spartina pectinata	707.1		1244.4								0.2				935.0	133.6	
Sporobolus cryptandrus																	1.2
<b>Total NPG(w)</b>	<b>1028.5</b>		<b>1244.4</b>		<b>407.4</b>	<b>240.5</b>	<b>309.5</b>	<b>414.4</b>	<b>216.0</b>	<b>233.5</b>	<b>224.3</b>	<b>477.1</b>		<b>162.0</b>	<b>969.1</b>	<b>277.3</b>	<b>28.2</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>1734.8</b>	<b>3109.3</b>	<b>3554.9</b>		<b>710.3</b>	<b>906.1</b>	<b>962.7</b>	<b>1871.8</b>	<b>832.1</b>	<b>817.6</b>	<b>1071.2</b>	<b>1494.0</b>		<b>1278.5</b>	<b>2208.4</b>	<b>1411.3</b>	<b>207.6</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>278.3</b>			<b>3505.9</b>	<b>185.4</b>	<b>1.1</b>			<b>43.1</b>	<b>88.3</b>	<b>97.6</b>	<b>464.4</b>	<b>4521.7</b>	<b>156.7</b>	<b>512.6</b>	<b>207.5</b>	<b>1662.1</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>2013.1</b>	<b>3109.3</b>	<b>3554.9</b>	<b>3505.9</b>	<b>895.7</b>	<b>907.2</b>	<b>962.7</b>	<b>1871.8</b>	<b>875.2</b>	<b>905.9</b>	<b>1168.8</b>	<b>1958.4</b>	<b>4521.7</b>	<b>1435.1</b>	<b>2721.0</b>	<b>1618.8</b>	<b>1869.7</b>
<b>NATIVE ANNUAL GRASS</b>						<b>0.6</b>					<b>1.8</b>			<b>0.3</b>		<b>0.3</b>	
<b>INTRODUCED ANNUAL GRASS</b>									<b>4.3</b>								
<b>TOTAL ANNUAL GRASS</b>						<b>0.6</b>			<b>4.3</b>		<b>1.8</b>			<b>0.3</b>		<b>0.3</b>	
<b>NATIVE PERENNIAL FORBS</b>	<b>168.5</b>		<b>1175.7</b>	<b>3.2</b>	<b>22.5</b>	<b>97.7</b>	<b>50.3</b>		<b>100.7</b>	<b>227.6</b>	<b>77.4</b>	<b>5.9</b>		<b>107.2</b>	<b>49.4</b>	<b>98.9</b>	<b>46.0</b>
<b>INTRODUCED PERENNIAL FORBS</b>	<b>21.7</b>			<b>63.0</b>		<b>0.1</b>			<b>12.6</b>	<b>3.9</b>	<b>0.9</b>		<b>239.5</b>	<b>0.1</b>	<b>6.1</b>	<b>1.0</b>	<b>6.4</b>
<b>TOTAL PERENNIAL FORBS</b>	<b>190.2</b>		<b>1175.7</b>	<b>66.2</b>	<b>22.5</b>	<b>97.8</b>	<b>50.3</b>		<b>113.3</b>	<b>231.4</b>	<b>78.3</b>	<b>5.9</b>	<b>239.5</b>	<b>107.3</b>	<b>55.5</b>	<b>99.9</b>	<b>52.4</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>	<b>63.2</b>			<b>11.0</b>		<b>5.3</b>			<b>31.5</b>		<b>41.0</b>	<b>3.7</b>		<b>28.7</b>			<b>7.2</b>
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>	<b>91.1</b>		<b>1.7</b>	<b>22.1</b>		<b>0.1</b>			<b>21.7</b>	<b>0.8</b>	<b>2.1</b>	<b>15.7</b>		<b>4.4</b>	<b>12.7</b>	<b>5.6</b>	<b>3.0</b>
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>154.4</b>		<b>1.7</b>	<b>33.1</b>		<b>5.5</b>			<b>53.2</b>	<b>0.8</b>	<b>43.1</b>	<b>19.5</b>		<b>33.2</b>	<b>12.7</b>	<b>30.2</b>	<b>10.2</b>
<b>TOTAL HERBACEOUS</b>	<b>2357.7</b>	<b>3109.3</b>	<b>4732.3</b>	<b>3605.3</b>	<b>918.2</b>	<b>1011.1</b>	<b>1013.0</b>	<b>1871.8</b>	<b>1046.0</b>	<b>1138.1</b>	<b>1291.9</b>	<b>1983.7</b>	<b>4761.2</b>	<b>1575.9</b>	<b>2789.1</b>	<b>1749.3</b>	<b>1932.3</b>
<b>SHRUBS</b>																	
Artemisia cana									12.4		26.5			112.5	22.5	99.7	
Rosa arkansana						5.8											
Rosa woodsii					39.4									2.6		2.2	0.4
Symphoricarpos occidentalis	82.7			33.3									1280.0	12.0	299.7	53.1	106.7
<b>TOTAL SHRUBS</b>	<b>82.7</b>			<b>33.3</b>	<b>39.4</b>	<b>5.8</b>			<b>12.4</b>		<b>26.5</b>		<b>1280.0</b>	<b>127.1</b>	<b>322.1</b>	<b>155.0</b>	<b>107.1</b>
<b>TOTAL</b>	<b>2440.4</b>	<b>3109.3</b>	<b>4732.3</b>	<b>3638.5</b>	<b>957.7</b>	<b>1016.8</b>	<b>1013.0</b>	<b>1871.8</b>	<b>1058.4</b>	<b>1138.1</b>	<b>1318.4</b>	<b>1983.7</b>	<b>6041.2</b>	<b>1703.1</b>	<b>3111.3</b>	<b>1904.2</b>	<b>2039.4</b>

n = number of sample sites  
 NPG (c) = native Perennial Grass (cool season).  
 NPG (w) = native Perennial Graminoid (warm).

TABLE C12

RELATIVE PRODUCTION (PERCENT) FOR ECOLOGICAL SITES, RIPARIAN WOODLAND AND TAME PASTURE SAMPLED – VEGETATION STUDY AREA  
STARK COUNTY, NORTH DAKOTA, 2006-2007

ECOLOGICAL SITE / VEGETATION TYPE

	Saline Lowland - Wet Land - Subirrigated n=9	Loamy Overflow -Subirrigated - Wet Land n=1	Wet Land - Wet Meadow n=4	Riparian Woodland n=10	Shallow Clayey n=2	Shallow Loamy n=14	Shallow Sandy n=2	Claypan n=1	Thin Claypan n=14	Sandy n=5	Clayey n=8	Loamy n=2	Loamy Overflow n=1	Loamy Terrace n=12	Loamy Terrace (occ. CyT) n=2	Loamy Terrace Composite n=14	Tame Pasture n=34
<b>NATIVE PERENNIAL GRASS (Cool Season)</b>																	
Agropyron dasystachyum					2.5	2.8	3.2		1.3	3.7				2.6		2.2	0.01
Agropyron smithii						15.7	12.2		32.1	3.2	55.0	44.5		47.6	0.7	40.9	4.4
Agropyron trachycaulum									1.0					0.8		0.7	0.7
Calamagrostis montanensis						0.7	2.3		0.1	0.9	0.1			0.1		0.1	
Carex aquatilis		100.0															
Carex eleocharis						0.8	8.0		3.1	1.6	1.3	3.1		1.8		1.6	0.2
Carex filifolia					18.1	14.8				5.8		3.0		0.01		0.01	
Carex heliophila						3.9	0.2			13.4							
Carex laeviconica			36.7												39.2	5.6	
Carex lanuginosa			1.8														
Carex praegracilis	3.9																
Eleocharis xyridiformis	0.3		8.9														
Hordeum jubatum	0.3		1.4					47.3									
Koeleria pyramidata					0.7	6.5	8.7		3.0	3.3	1.8			2.0		1.7	0.01
Poa glaucifolia	1.6							24.2									
Poa sandbergii						0.03			11.0		0.7	0.2		0.9		0.8	0.01
Puccinellia cusickii	12.6																
Puccinellia nuttalliana	10.1							6.4	0.3								
Stipa comata					10.3	17.0	29.8		0.2	18.5	2.7	0.4		2.0		1.7	2.8
Stipa viridula						3.2			6.0	1.0	2.7			7.8		6.6	0.7
<b>Total NPG(c)</b>	<b>28.9</b>	<b>100.0</b>	<b>48.8</b>		<b>31.6</b>	<b>65.5</b>	<b>64.5</b>	<b>77.9</b>	<b>58.2</b>	<b>51.3</b>	<b>64.2</b>	<b>51.3</b>		<b>65.6</b>	<b>39.8</b>	<b>61.9</b>	<b>8.8</b>
<b>NATIVE PERENNIAL GRASS (Warm Season)</b>																	
Andropogon scoparius						4.7											
Bouteloua gracilis					4.4	11.5	14.1		4.3	4.2	8.0	23.6		8.4	1.1	7.3	0.4
Buchloe dactyloides						1.8			10.6	6.5	4.2						0.7
Calamovilfa longifolia					38.0	3.0	16.5			9.8				0.3		0.3	
Distichlis spicata	13.2							22.1	4.4		4.6			0.8		0.7	0.1
Muhlenbergia cuspidata					0.1	2.6			1.1			0.4					
Schedonnardus paniculatus									0.02		0.2						0.1
Spartina pectinata	29.0		26.3								0.02				30.1	4.3	
Sporobolus cryptandrus																	0.1
<b>Total NPG(w)</b>	<b>42.1</b>		<b>26.3</b>		<b>42.5</b>	<b>23.7</b>	<b>30.5</b>	<b>22.1</b>	<b>20.4</b>	<b>20.5</b>	<b>17.0</b>	<b>24.0</b>		<b>9.5</b>	<b>31.1</b>	<b>12.6</b>	<b>1.4</b>
<b>NATIVE PERENNIAL GRASS (Total)</b>	<b>71.1</b>	<b>100.0</b>	<b>75.1</b>		<b>74.2</b>	<b>89.1</b>	<b>95.0</b>	<b>100.0</b>	<b>78.6</b>	<b>71.8</b>	<b>81.2</b>	<b>75.3</b>		<b>75.1</b>	<b>71.0</b>	<b>74.5</b>	<b>10.2</b>
<b>INTRODUCED PERENNIAL GRASS</b>	<b>11.4</b>			<b>96.4</b>	<b>19.4</b>	<b>0.1</b>			<b>4.1</b>	<b>7.8</b>	<b>7.4</b>	<b>23.4</b>	<b>74.8</b>	<b>9.2</b>	<b>16.5</b>	<b>10.2</b>	<b>81.5</b>
<b>TOTAL PERENNIAL GRASS</b>	<b>82.5</b>	<b>100.0</b>	<b>75.1</b>	<b>96.4</b>	<b>93.5</b>	<b>89.2</b>	<b>95.0</b>	<b>100.0</b>	<b>82.7</b>	<b>79.6</b>	<b>88.6</b>	<b>98.7</b>	<b>74.8</b>	<b>84.3</b>	<b>87.5</b>	<b>84.7</b>	<b>91.7</b>
<b>NATIVE ANNUAL GRASS</b>						<b>0.1</b>					<b>0.1</b>			<b>0.02</b>		<b>0.01</b>	
<b>INTRODUCED ANNUAL GRASS</b>									<b>0.4</b>								
<b>TOTAL ANNUAL GRASS</b>						<b>0.1</b>			<b>0.4</b>		<b>0.1</b>			<b>0.02</b>		<b>0.01</b>	
<b>NATIVE PERENNIAL FORBS</b>	<b>6.9</b>		<b>24.8</b>	<b>0.1</b>	<b>2.3</b>	<b>9.6</b>	<b>5.0</b>		<b>9.5</b>	<b>20.0</b>	<b>5.9</b>	<b>0.3</b>		<b>6.3</b>	<b>1.6</b>	<b>5.6</b>	<b>2.3</b>
<b>INTRODUCED PERENNIAL FORBS</b>	<b>0.9</b>		<b>1.7</b>			<b>0.01</b>			<b>1.2</b>	<b>0.3</b>	<b>0.1</b>		<b>4.0</b>	<b>0.01</b>	<b>0.2</b>	<b>0.04</b>	<b>0.3</b>
<b>TOTAL PERENNIAL FORBS</b>	<b>7.8</b>		<b>24.8</b>	<b>1.8</b>	<b>2.3</b>	<b>9.6</b>	<b>5.0</b>		<b>10.7</b>	<b>20.3</b>	<b>5.9</b>	<b>0.3</b>	<b>4.0</b>	<b>6.3</b>	<b>1.8</b>	<b>5.7</b>	<b>2.6</b>
<b>NATIVE ANNUAL/BIENNIAL FORBS</b>	<b>2.6</b>			<b>0.3</b>		<b>0.5</b>			<b>3.0</b>		<b>3.1</b>	<b>0.2</b>		<b>1.7</b>		<b>1.4</b>	<b>0.4</b>
<b>INTRODUCED ANNUAL/BIENNIAL FORBS</b>	<b>3.7</b>		<b>0.04</b>	<b>0.6</b>		<b>0.01</b>			<b>2.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.8</b>		<b>0.3</b>	<b>0.4</b>	<b>0.3</b>	<b>0.1</b>
<b>TOTAL ANNUAL/BIENNIAL FORBS</b>	<b>6.3</b>		<b>0.04</b>	<b>0.9</b>		<b>0.5</b>			<b>5.0</b>	<b>0.1</b>	<b>3.3</b>	<b>1.0</b>		<b>1.9</b>	<b>0.4</b>	<b>1.7</b>	<b>0.5</b>
<b>TOTAL HERBACEOUS</b>	<b>96.6</b>	<b>100.0</b>	<b>100.0</b>	<b>99.1</b>	<b>95.9</b>	<b>99.4</b>	<b>100.0</b>	<b>100.0</b>	<b>98.8</b>	<b>100.0</b>	<b>98.0</b>	<b>100.0</b>	<b>78.8</b>	<b>92.5</b>	<b>89.6</b>	<b>92.1</b>	<b>94.8</b>
<b>SHRUBS</b>																	
Artemisia cana									1.2		2.0			6.6	0.7	5.8	
Rosa arkansana						0.6											
Rosa woodsii					4.1									0.2		0.1	0.02
Symphoricarpos occidentalis	3.4			0.9									21.2	0.7	9.6	2.0	5.2
<b>TOTAL SHRUBS</b>	<b>3.4</b>			<b>0.9</b>	<b>4.1</b>	<b>0.6</b>			<b>1.2</b>		<b>2.0</b>		<b>21.2</b>	<b>7.5</b>	<b>10.4</b>	<b>7.9</b>	<b>5.3</b>
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

n = number of sample sites  
NPG (c) = native Perennial Grass (cool season).  
NPG (w) = native Perennial Graminoid (warm).