



Montana-South Dakota Urban Forest Inventory & Assessment Awarded 2013

South Dakota Department of Agriculture
Division of Resource Conservation & Forestry
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The Montana-South Dakota Urban Forest Inventory & Assessment project supports the South Dakota Forest Action Plan and the following S&PF National Priorities and Objectives:

- 1.2—Actively and sustainably manage forests
- 2.2—Identify, manage, and reduce threats to forest and ecosystem health
- 3.3—Assist communities in planning for and reducing forest health risks
- 3.4—Maintain and enhance the economic benefits and values of trees and forests
- 3.6—Connect people to trees and forests, and engage them in environmental stewardship activities
- 3.7—Manage trees and forests to mitigate and adapt to global climate change

Program involvement in each objective is noted by objective number.

Program Overview

Seventy-seven percent of South Dakotans live within 'urban' areas. In many of these communities the community forests are aging and over-mature. Beginning in 2013, the Montana- South Dakota Urban Forest Inventory & Assessment (MT-SD UFIA) project was initiated to provide communities with an inventory and analysis of urban forest resources and management recommendations.

Expanding the inventory work performed during the Great Plains Initiative (GPI), MT-SD UFIA collected public tree inventories on 20,569 trees in 28 South Dakota communities during the summer of 2014. These inventories were analyzed using i-Tree. For each tree, five attributes were recorded: location, diameter, height, species, and condition. Because of the threat of emerald ash borer (EAB) to native ash trees in South Dakota, additional analyses were conducted on the ash populations. On average, 33% of public trees in the

inventoried communities were ash, with some as high as 51% ash. Once completed, the analyses were provided to the communities and the results were explained. Further, division foresters provide reports to the communities in order to point out features that help to explicate their message.

Going forward, the division plans to further analyze the data collected during GPI and MT-SD UFIA to identify trends in urban forest composition, comparing the recent inventories with those completed roughly ten years ago to observe trends in forest age and structure.

The MT-SD UFIA project targets efforts to threats and priority areas identified in the state's Forest Action Plan. Strategies used include: completing inventories and analyses, making management recommendations, and educating communities on the results of the analysis. (Objectives Addressed: 1.2, 2.2, 3.3, 3.4, 3.6, 3.7)

Inventory Work

(Objectives Addressed: 1.2, 2.2, 3.3, 3.4, 3.6, 3.7)

- 28 Communities inventoried across the state that provided a representative sample of different regions and community sizes, in all 20,569 trees were recorded.
- Work contracted with Community Forestry Consultants at a rate of \$4.30 per tree.
- Match was provided by Tree City USA spending.
- In the future, the division hopes that communities, with assistance from division foresters, will continue to update inventories every 5 years or so.

Each tree had 5 attributes collected:

1. Location (georeferenced point)
2. Tree species
3. Stem diameter at breast height
4. Tree height
5. Tree condition (excellent, good, fair, poor)

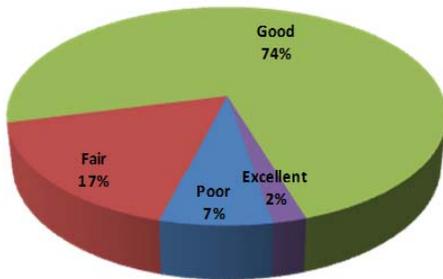
Each tree was stored in a Treeworks™ database and when the contractors finished work, was delivered to the division.



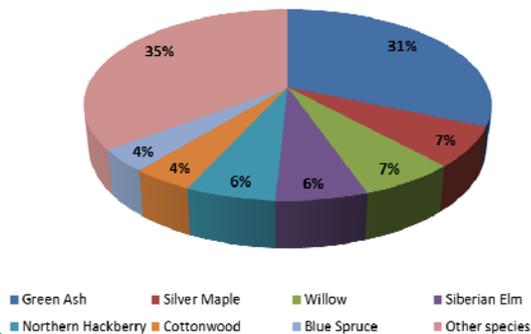
Collected data was analyzed using Treeworks™ and i-Tree and the resulting information was compiled into reports that were delivered to the inventoried communities.

Key Results

Condition Class Distribution



Species Distribution





Native Ash

Emerald Ash Borer (EAB) is an exotic invasive insect pest that, since its first detection in Michigan in 2002 has caused extensive ash mortality in 25 US states and two Canadian province. All ash species native to North America are susceptible to attack and the majority die within 7 years of initial attack. Once killed by EAB, ash trees quickly dry out and become hazards. EAB has not yet been detected in South Dakota, but has been detected in Central Iowa and the Minneapolis/St. Paul area. Because of the high proportion of EAB susceptible ash in South Dakota community forests, additional analysis was done on the ash that were inventoried during this project.

- 33% of trees inventoried (6,779 trees) were native ash
- Removal and replacement cost once EAB infestation is confirmed: \$5.92-11.36 million
- There are approximately 4.72 million urban trees in South Dakota.
- This means there may be as many as 1.58 million ash, with a replacement cost of over \$10 billion.



Communities Inventoried

(Objectives Addressed: 1.2, 2.2, 3.3, 3.4, 3.6, 3.7)

The Division of Resource Conservation & Forestry contracted Community Forestry Consultants of Spokane, WA to conduct public tree inventories in 28 communities in South Dakota, 20,569 trees were recorded at a rate of \$4.30/tree.

Community	Number of Trees Inventoried	% Good/Excellent	% Fair	% Poor	# Ash	% Ash	Ash Replacement Cost Range	
Beresford	1,100	80%	17%	3%	319	29%	\$ 338,384	\$ 509,500
Canton	1,500	84%	13%	3%	542	36%	\$ 625,957	\$ 878,048
Chamberlain	851	77%	17%	6%	204	24%	\$ 148,267	\$ 284,507
Eagle Butte	103	41%	33%	26%	16	16%	\$ 6,769	\$ 10,617
Elk Point	791	84%	13%	3%	296	37%	\$ 297,475	\$ 404,918
Flandreau	1,103	80%	16%	4%	493	45%	\$ 490,978	\$ 629,259
Fort Pierre	607	74%	15%	11%	155	26%	\$ 100,558	\$ 284,506
Gettysburg	923	75%	16%	9%	170	18%	\$ 136,436	\$ 561,795
Highmore	715	81%	13%	6%	332	46%	\$ 98,674	\$ 368,682
Hot Springs	1,623	56%	27%	17%	131	10%	\$ 80,156	\$ 216,177
Howard	688	72%	21%	7%	307	45%	\$ 315,615	\$ 384,573
Ipswich	574	76%	16%	8%	244	43%	\$ 205,358	\$ 873,603
Kadoka	256	68%	17%	15%	23	9%	\$ 15,710	\$ 64,681
Lennox	871	79%	16%	5%	322	37%	\$ 300,605	\$ 409,410
Martin	290	78%	15%	7%	57	20%	\$ 32,066	\$ 95,000
Milbank	1,447	83%	14%	3%	740	51%	\$ 758,769	\$ 965,795
Miller	1,447	83%	12%	5%	455	31%	\$ 285,538	\$ 855,359
Mission	109	66%	26%	8%	9	8%	\$ 5,296	\$ 21,801
Mobridge	1,941	82%	12%	6%	695	35%	\$ 517,455	\$ 1,922,845
Murdo	181	77%	18%	5%	22	12%	\$ 14,048	\$ 41,119
Parkston	925	56%	35%	9%	339	37%	\$ 315,337	\$ 359,788
Philip	198	61%	21%	18%	36	19%	\$ 21,716	\$ 52,420
Pickstown	167	88%	11%	1%	40	24%	\$ 23,161	\$ 61,969
Salem	532	73%	18%	9%	204	38%	\$ 207,651	\$ 272,186
Timber Lake	158	69%	18%	13%	32	20%	\$ 18,731	\$ 52,780
Wall	256	69%	24%	7%	51	20%	\$ 30,098	\$ 80,787
Webster	1,120	75%	20%	5%	525	47%	\$ 518,552	\$ 634,775
Wood	93	86%	1%	13%	20	22%	\$ 12,797	\$ 65,312
Totals	20,569	74%	18%	8%	6779	33%	\$ 5,922,157	\$ 11,362,212

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