

Anchorage Forestland Assessment & Management Plan

Presented by:

Scott Stringer, Municipal Forester
Municipality of Anchorage
Parks & Recreation

Introduction

- Purpose of the Canopy Assessment
- Forest Benefits – Case Studies
- Forestland Management Plan
- What's Next?

Purpose

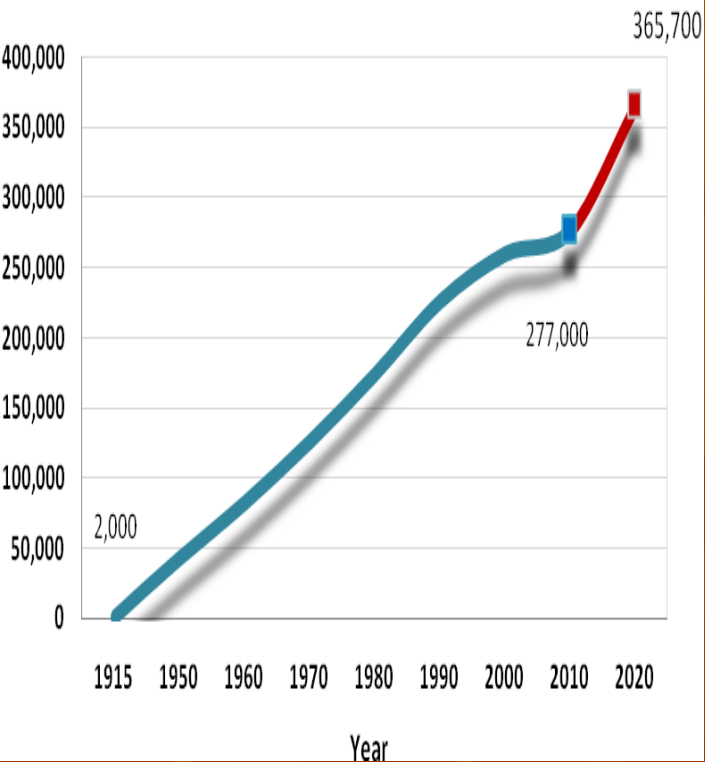
- Preserve and enhance Anchorage's natural and developed forests and the benefits they provide that are critical to the quality of life of residents, visitors, and wildlife.

Plan Goals

- Conserve the current level of overall tree canopy cover at no net loss and maximize the flow of benefits
- Support smart growth and development while preserving the quality of life in Anchorage
- Preserve recreational opportunities through responsible vegetation management along trails and other high-use areas
- Develop a sustainable, cost-efficient forest management program

Historic Anchorage

Population Growth



*Aerial photograph of Anchorage Bowl
dated August 1950.*

(Photo courtesy of Aeromap US.)

Anchorage after the boom



Aerial photograph of Anchorage Bowl dated May 1974.
(Photo courtesy of Aeromap US)



Aerial photograph of Anchorage Bowl dated September 2004.
(Photo courtesy of Aeromap US).

Current Canopy Cover

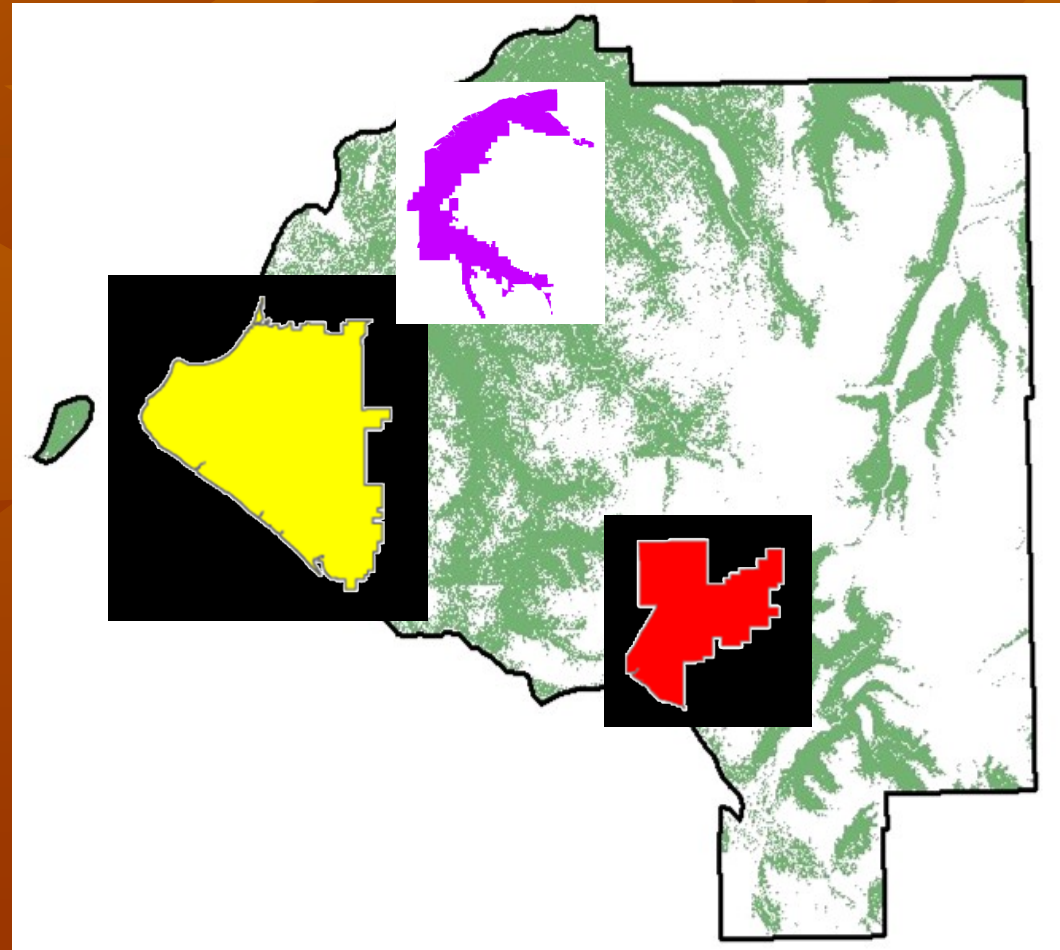
- The entire Municipality has 1,955 square miles with a total canopy cover of 59% (75% are in State, MOA parks, greenbelts, and USFS land)
- Anchorage bowl - 35%
- Eagle River/Chugiak - 58%
- Girdwood - 42%

Methods

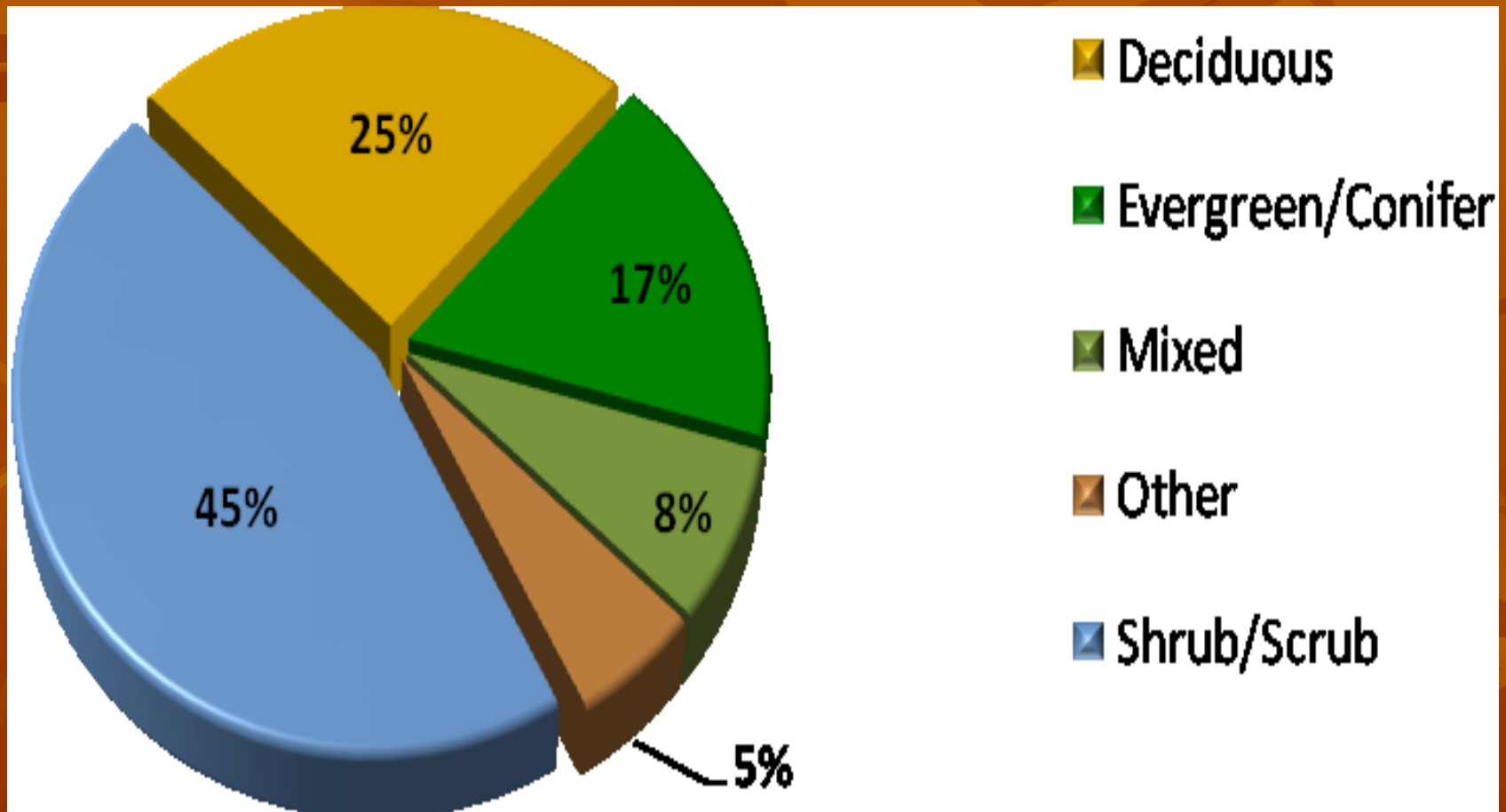
The Anchorage Forest Assessment considered all locations within the boundaries of the Municipality of Anchorage including the communities of Anchorage, Eagle River/Chugiak, and Girdwood.



Tree canopy cover includes both trees and woody shrubs and is illustrated here in this section of the Campbell Creek Greenbelt.



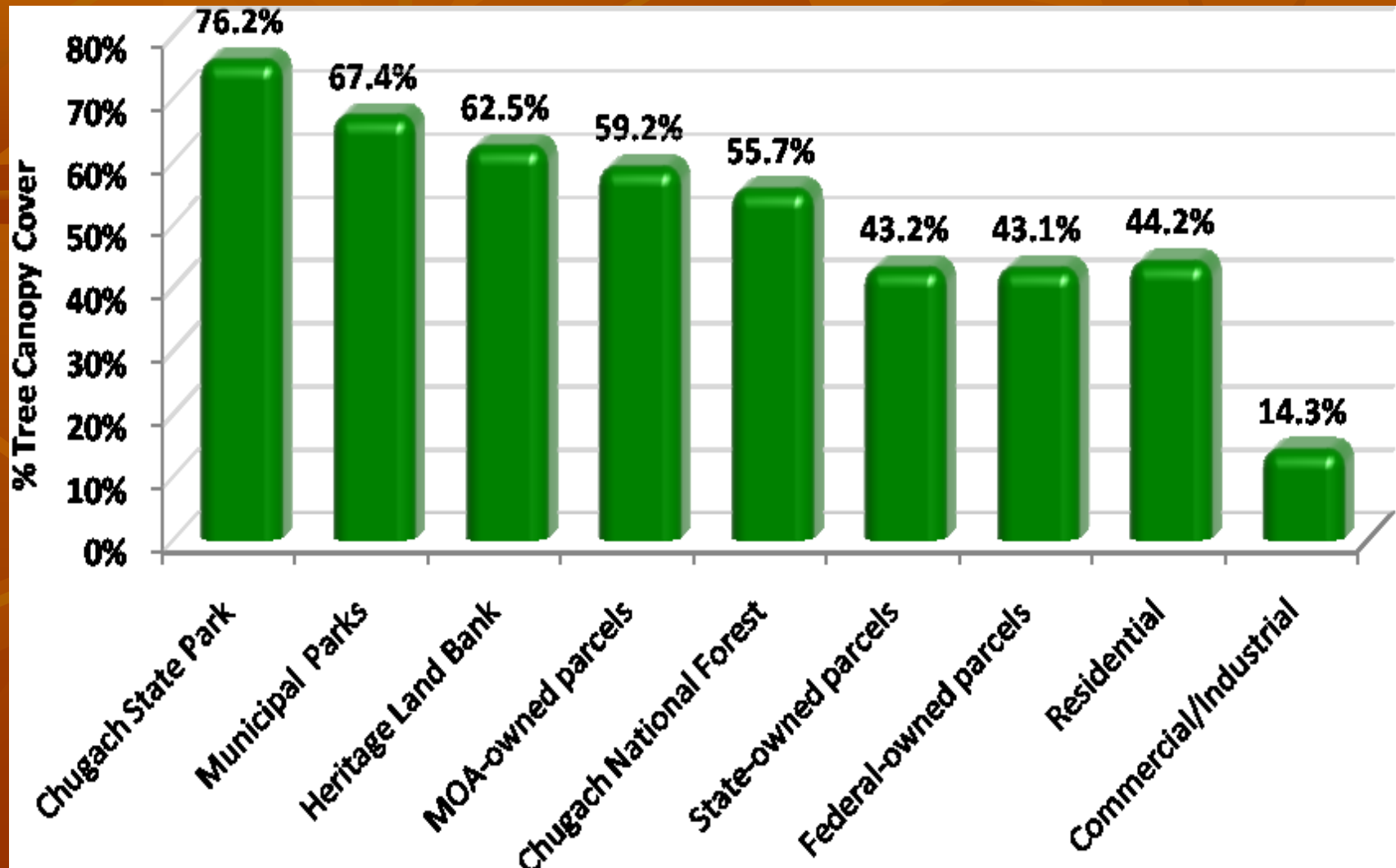
Municipality of Anchorage Land Cover Composition (MOA LC and NLCD)

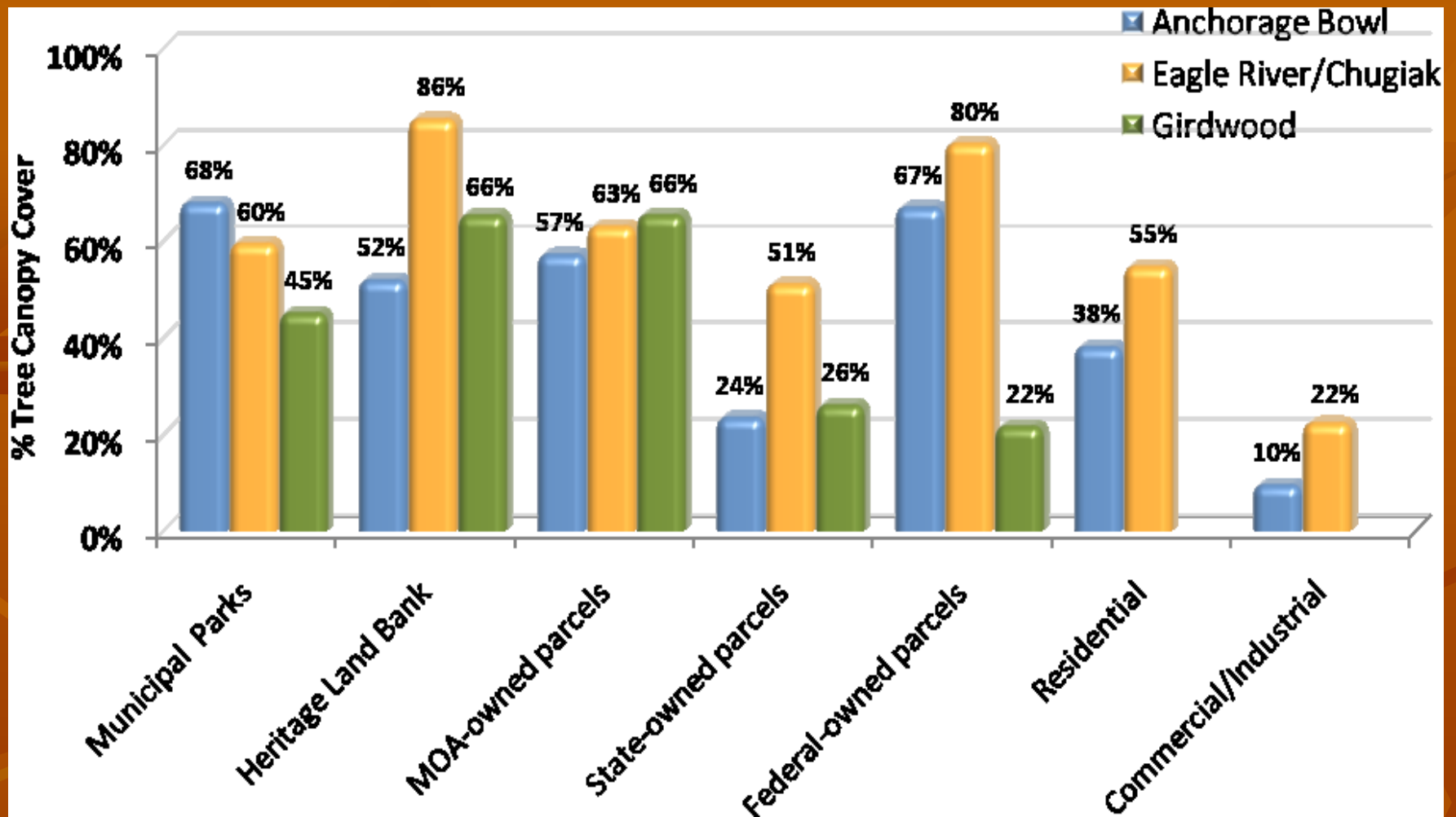


Overall Tree Canopy Cover on State, Federal, Municipal, and Private Lands

- **State-owned** (96 square miles) with 41 square miles of canopy, for an average tree canopy cover of 43%.
- **Federal-owned** (40 square miles, including some parcels within the Chugach State Park) with 17 square miles of canopy, for an average tree canopy cover of 43%.
- **Municipal-owned** (41 square miles) with 24 square miles of canopy, for an average tree canopy cover of 59%.
- **Private-owned** (58 square miles, residential and commercial) with 22 square miles of canopy, for an average tree canopy cover of 38%.

Tree canopy cover comparison for a variety of land use and parcel ownerships within the overall municipal boundary

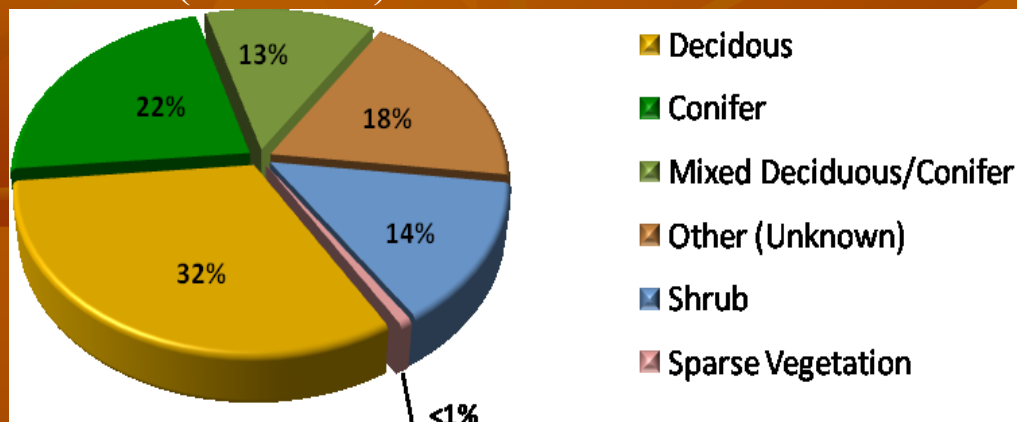




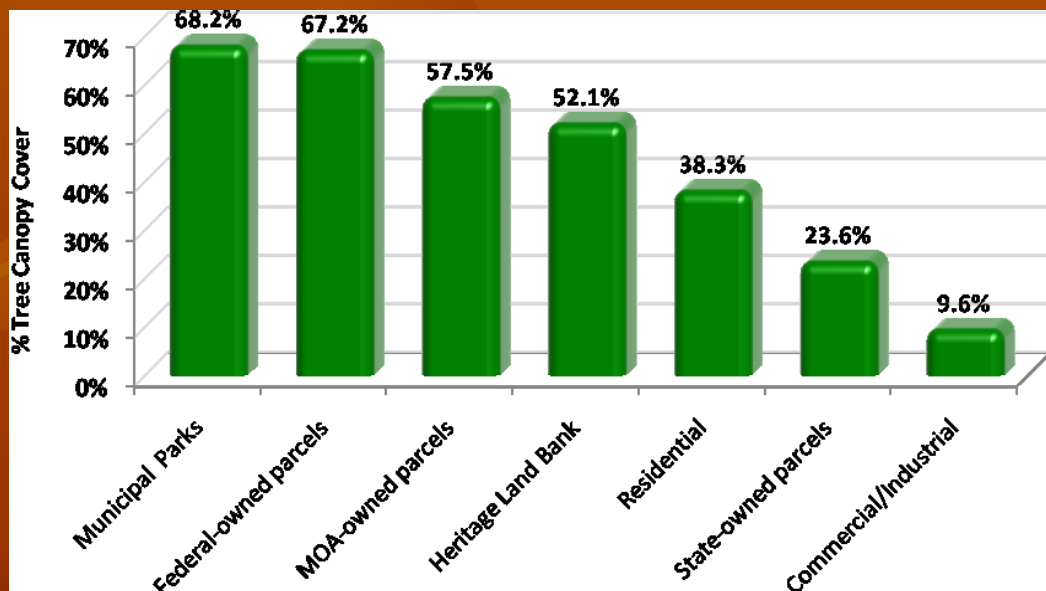
Tree canopy cover comparison between community boundaries for a variety of land use and parcel ownerships

Anchorage Bowl Species Composition

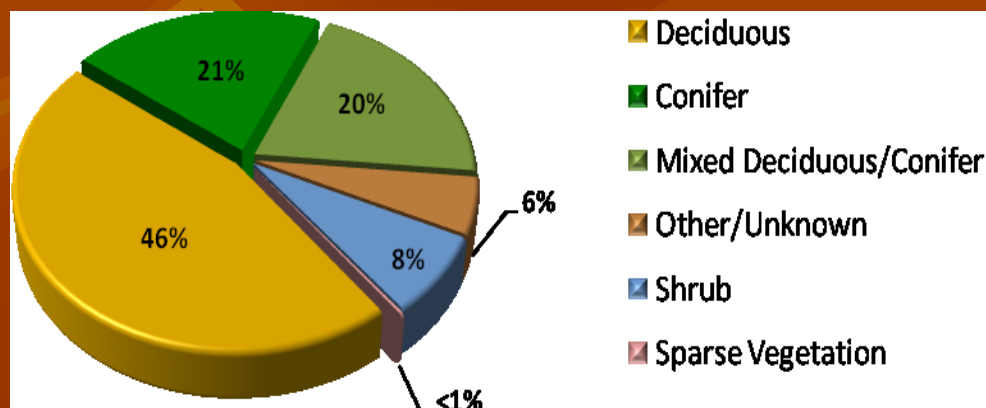
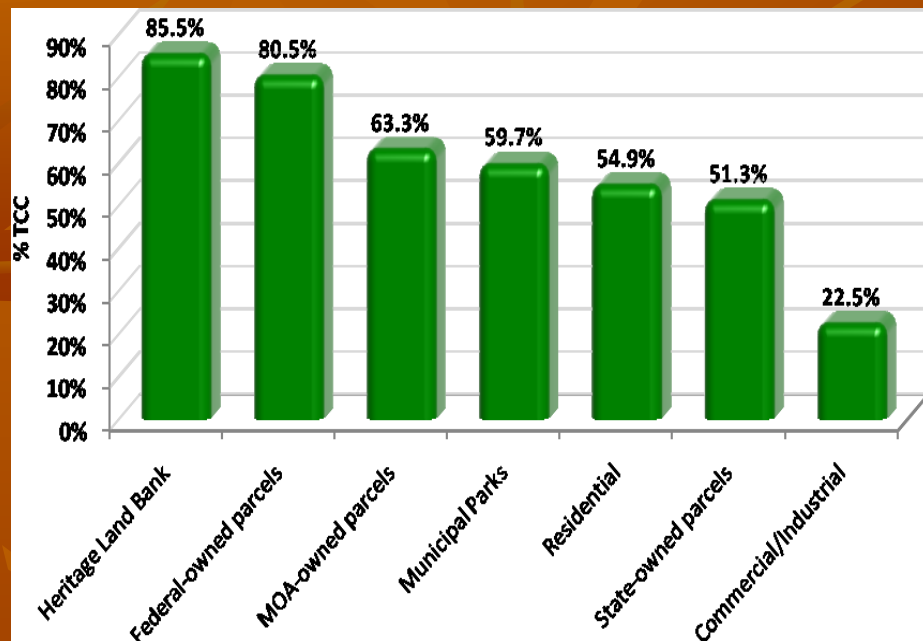
Overall forest type composition within the bowl (MOA LC)



Species - Anchorage Bowl	Acres	Canopy %
Tall Shrub, Alder/Mix	4521.14	18.30%
Other (Unknown)	4489.32	18.17%
Black Spruce	3355.32	13.58%
Mixed Deciduous-Conifer	3238.36	13.11%
Paper Birch	2852.02	11.54%
Low Shrub	2376.83	9.62%
White Spruce	1155.37	4.68%
Dwarf Shrub	1069.41	4.33%
Mixed Deciduous	402.62	1.63%
Spruce-Hemlock	371.47	1.50%
Mountain Hemlock	352.64	1.43%
All Sparse Vegetation	182.75	0.74%
Western Hemlock	98.93	0.40%
Other Conifer	85.87	0.35%
Balsam Poplar	50.33	0.20%
Spruce	44.86	0.18%
Aspen	36.42	0.15%
Sitka Spruce	26.31	0.11%
Total Canopy	24709.92	100.00%

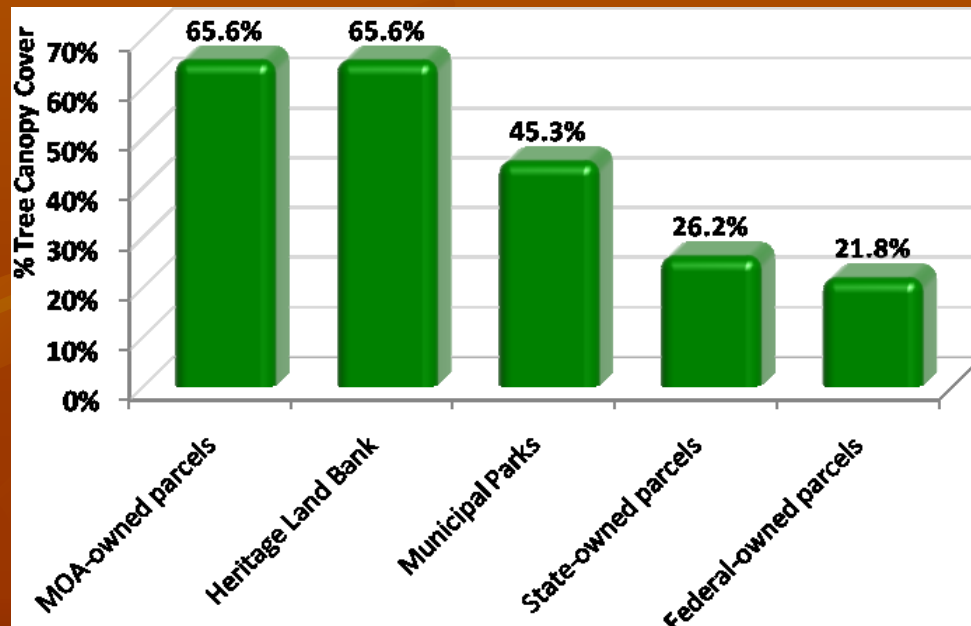
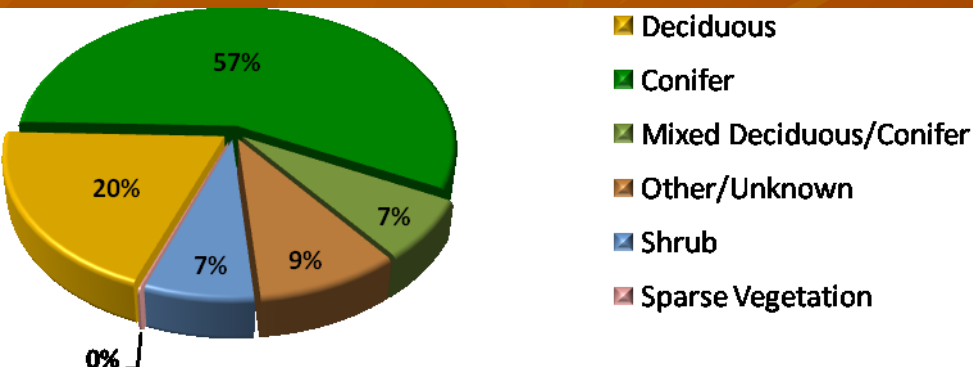


Eagle River/Chugiak Species Composition



Species - Eagle River/Chugiak	Canopy Acres	Canopy %
Paper Birch	7561.00	26.74%
Mixed Deciduous-Conifer	5734.59	20.28%
Tall Shrub, Alder/Mix	3936.24	13.92%
Black Spruce	2390.37	8.45%
White Spruce	2184.95	7.73%
Low Shrub	1817.52	6.43%
Other (Unknown)	1562.72	5.53%
Mixed Deciduous	1276.19	4.51%
Mountain Hemlock	506.43	1.79%
Spruce-Hemlock	461.37	1.63%
Dwarf Shrub	345.83	1.22%
Sitka Spruce	126.81	0.45%
Balsam Poplar	106.15	0.38%
Western Hemlock	90.22	0.32%
Spruce	77.87	0.28%
Sparse Vegetation	60.46	0.21%
Other Conifer	23.87	0.08%
Aspen	10.30	0.04%
Total Canopy	28272.87	100.00%

Girdwood Species Composition

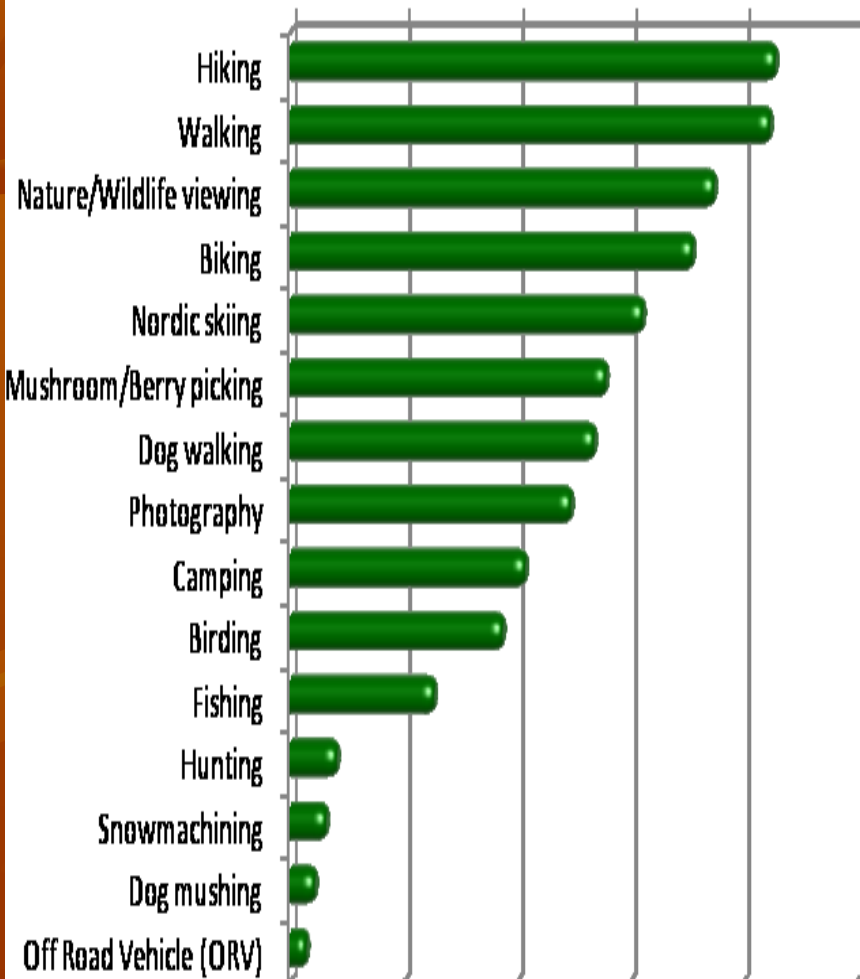


Species - Girdwood	Canopy Acres	Canopy %
Spruce-Hemlock	1794.91	20.80%
Tall Shrub, Alder/Mix	1069.23	12.39%
Sitka Spruce	970.36	11.24%
Western Hemlock	852.70	9.88%
Other (Unknown)	799.65	9.27%
Black Spruce	681.26	7.89%
Mixed Deciduous-Conifer	609.61	7.06%
Paper Birch	537.03	6.22%
Mountain Hemlock	480.44	5.57%
Low Shrub	467.38	5.42%
Dwarf Shrub	142.70	1.65%
White Spruce	97.01	1.12%
Mixed Deciduous	82.98	0.96%
Spruce	15.27	0.18%
Sparse Vegetation	13.23	0.15%
Other Conifer	7.79	0.09%
Aspen	7.75	0.09%
Total Canopy	8629.29	100%

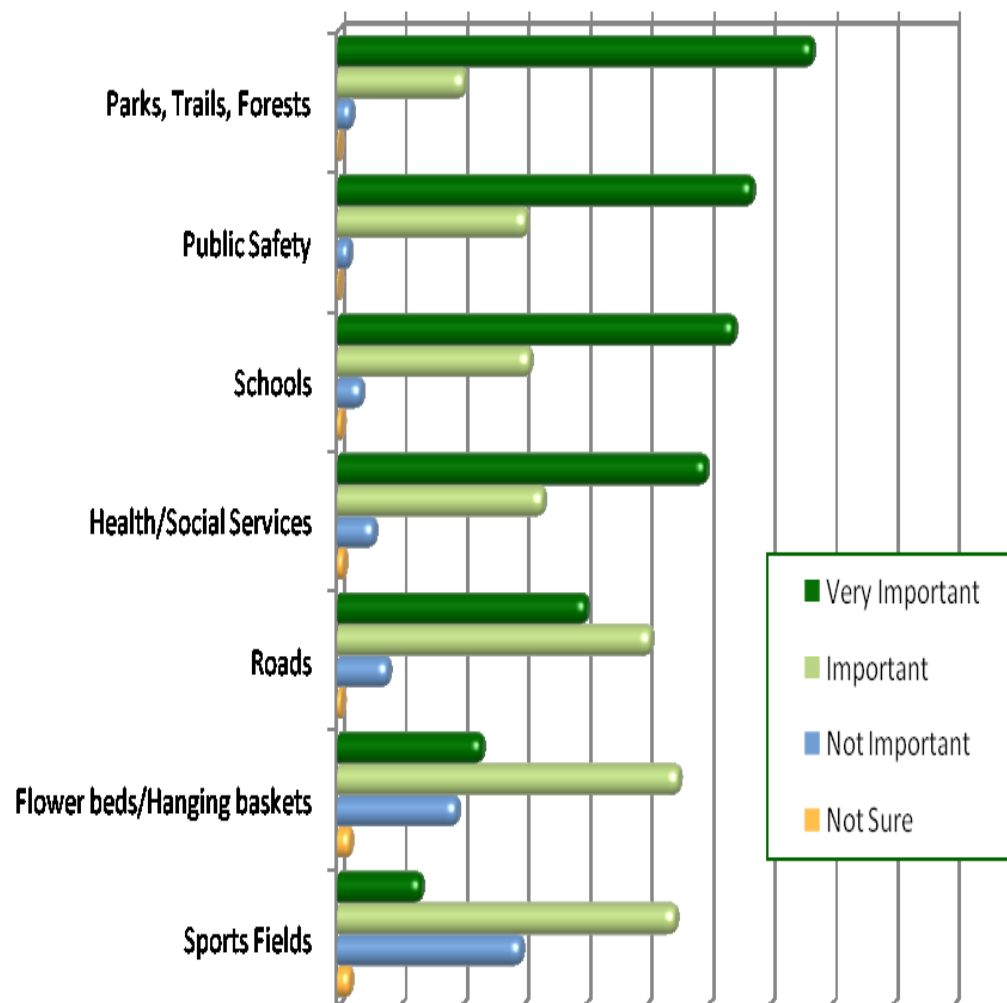
Public Survey Results

~ 1,000 Responses

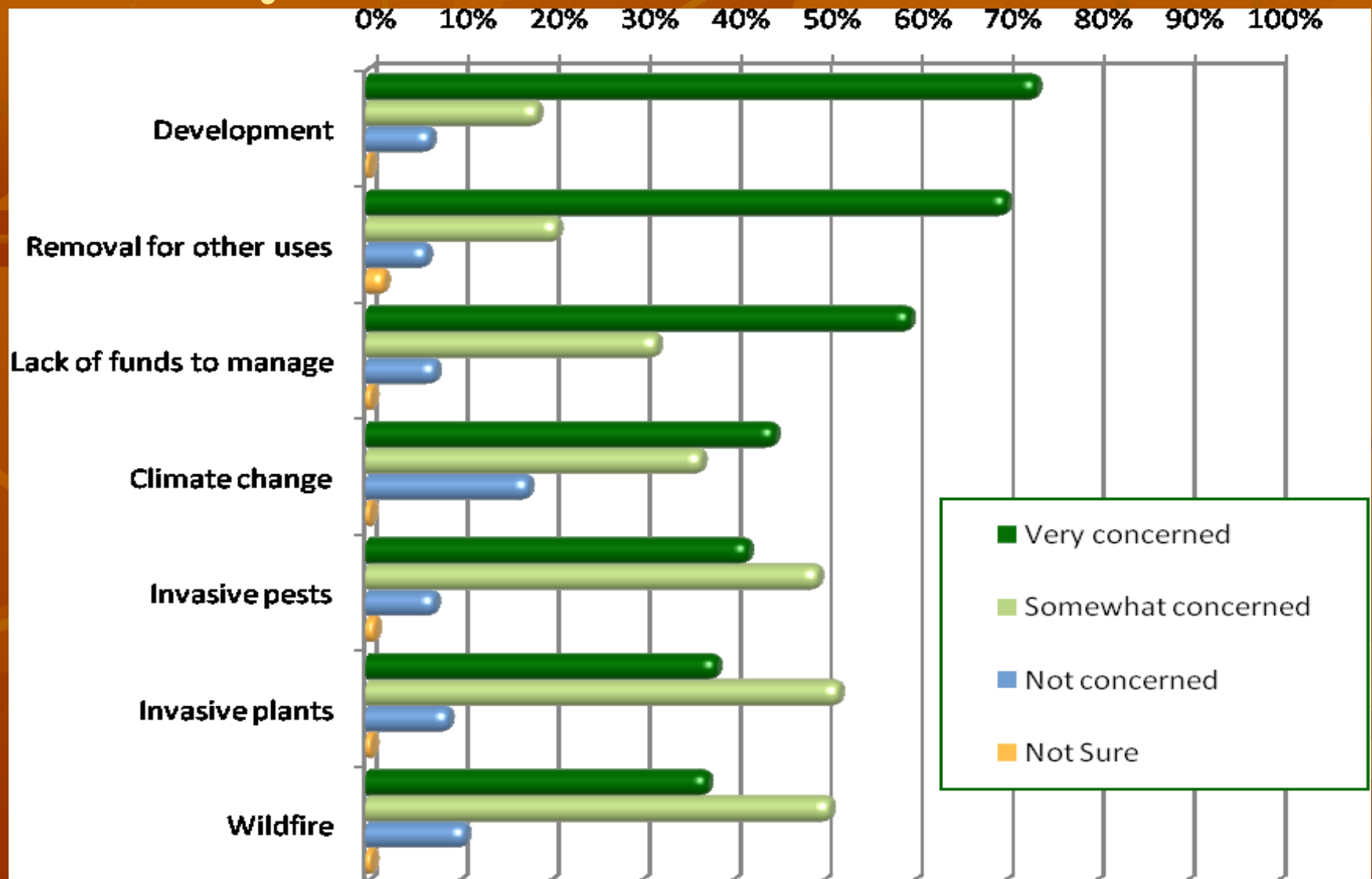
0% 20% 40% 60% 80% 100%



0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



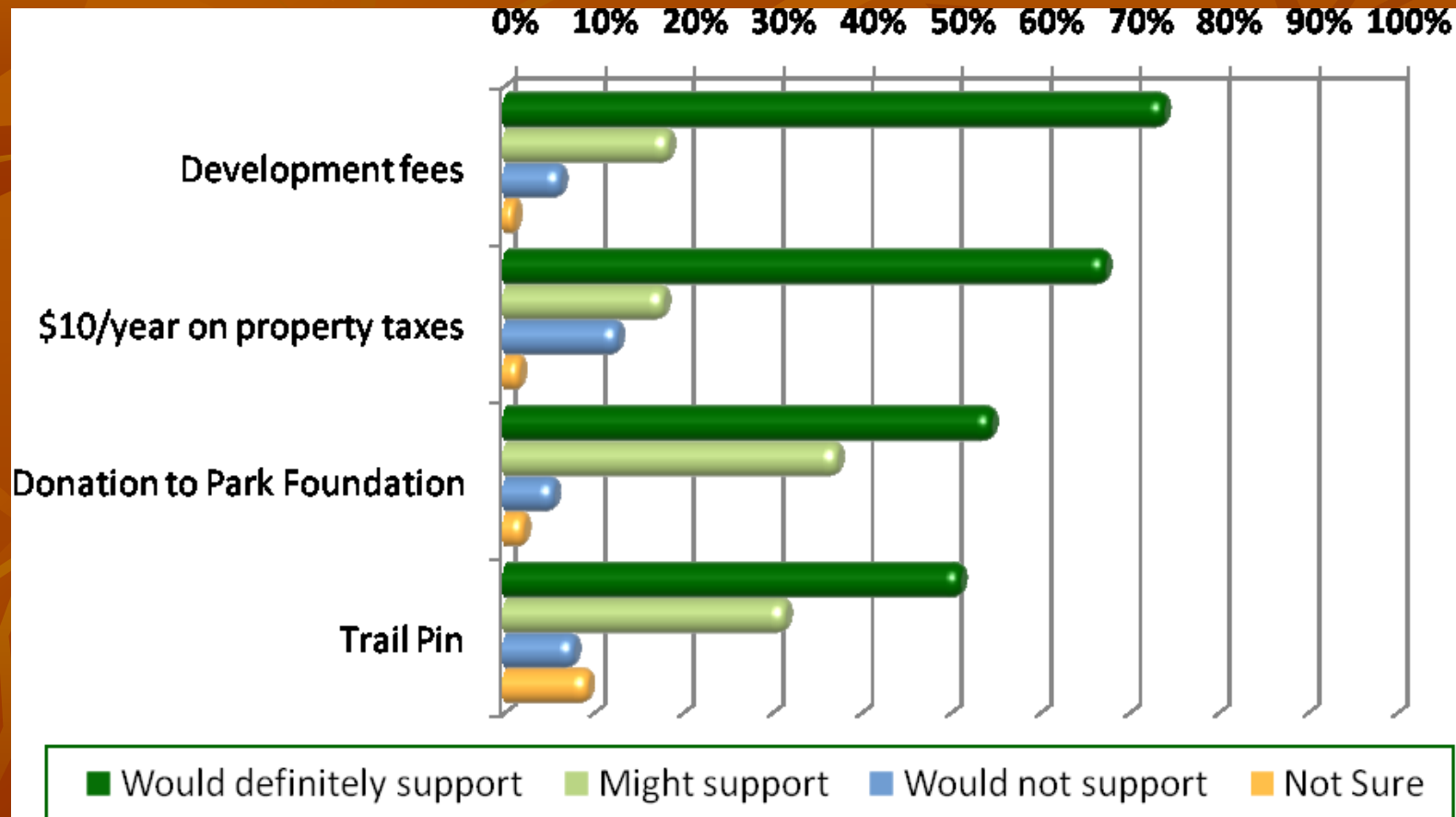
Survey Results – Threats to the Forest



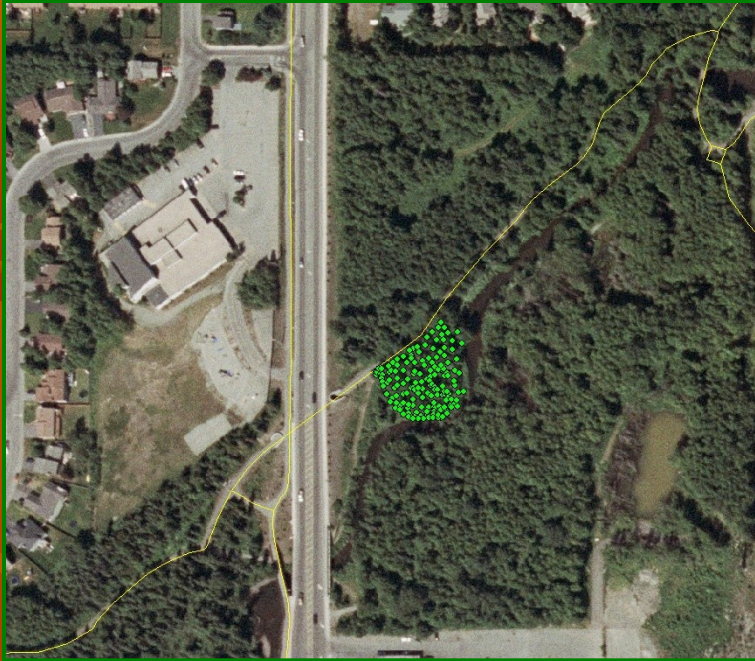
Survey Results of Public Views



Survey Results of Financial Support



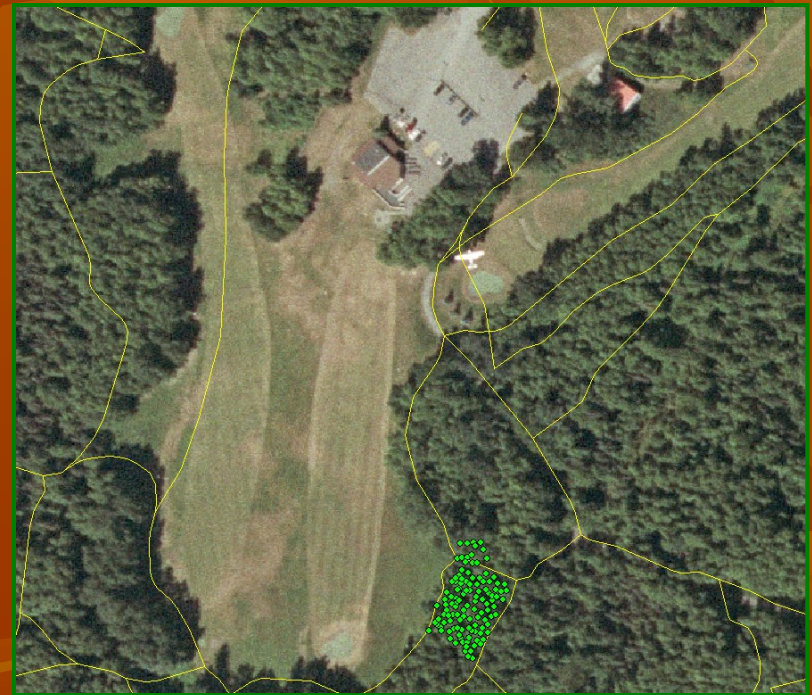
Case Studies and Forest Benefits



Campbell Creek Greenbelt sample inventory plot site

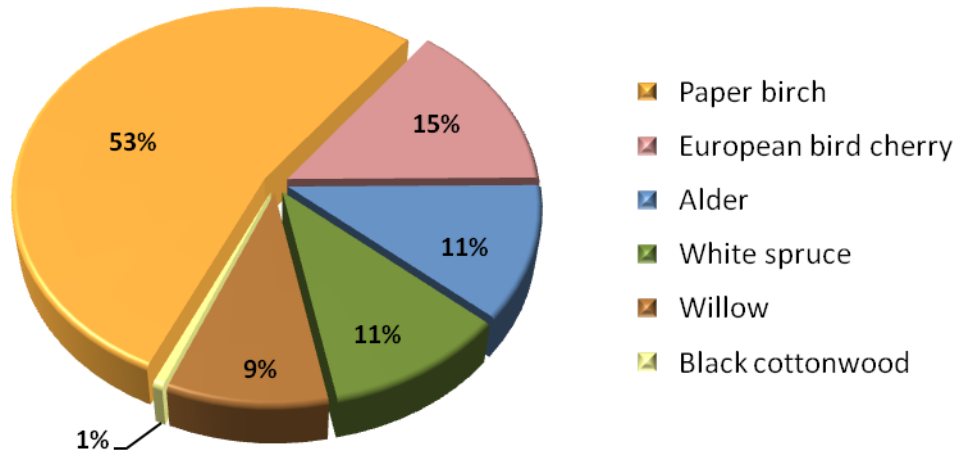
Replacement cost of one acre of Anchorage's paper birch forest with trees of similar size, species, and condition is estimated to be approximately \$637,362 per acre

Replacement cost of one acre of Anchorage's mixed forest with trees of similar size, species, and condition is estimated to be approximately \$684,877 per acre.



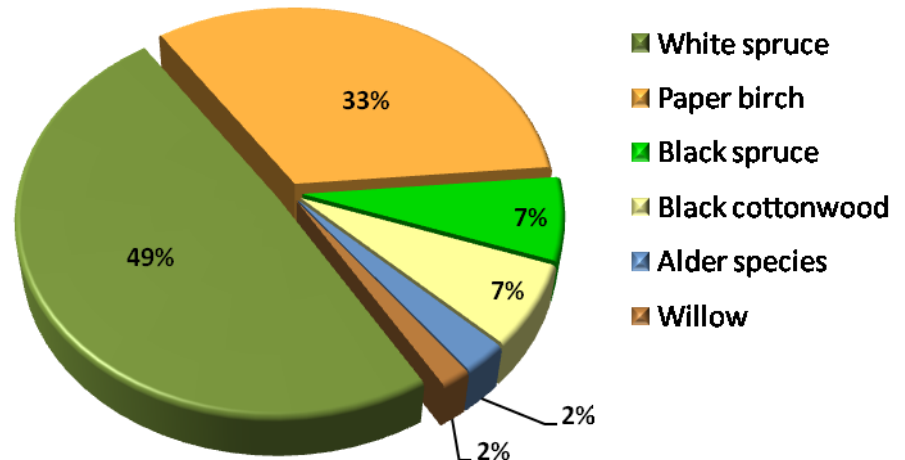
Location of the Russian Jack Springs sample inventory plot site

Species Composition



Population composition
of Campbell Creek
sample inventory

Population composition of
Russian Jack Springs Park
sample inventory



Storm Water Benefits – Campbell Creek

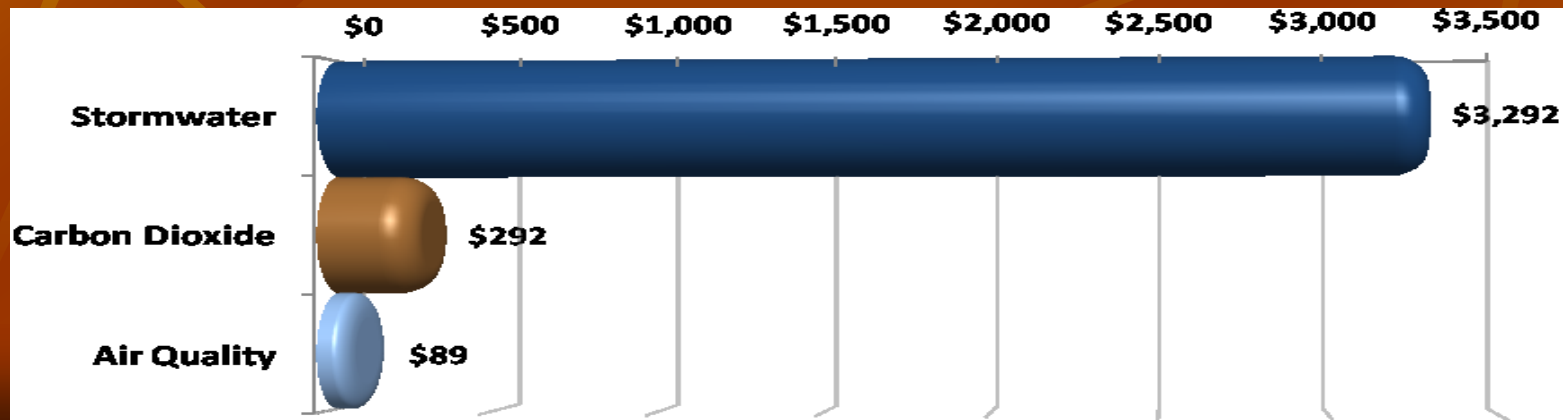
Species	Total Rainfall Interception (Gal)	Total \$ Value	% of Population	% of Total \$	Avg. \$/tree
Paper birch	91,268.65	985.77	53.46	59.89	11.60
European bird cherry	2,154.25	23.27	14.47	1.41	1.01
Alder species	14,590.76	157.59	11.32	9.57	8.76
White spruce	26,495.12	286.17	10.69	17.39	16.83
Willow	16,088.40	173.77	9.43	10.56	11.58
Black cottonwood	1,792.42	19.36	0.63	1.18	19.36
Sample total	152,389.60	\$1,645.92	100%	100%	\$10.35

Storm Water Benefits - RJSP

Species	Total Rainfall Interception (Gal)	Total \$ Value	% of Population	% of Total \$	Avg. \$/tree
White spruce	49,606.37	535.79	49.15	45.55	9.24
Paper birch	37,768.84	407.93	33.05	34.68	10.46
Black spruce	3,264.73	35.26	6.78	3.00	4.41
Black cottonwood	13,451.27	145.28	6.78	12.35	18.16
Alder species	4,245.46	45.85	2.54	3.90	15.28
Willow	575.54	6.22	1.69	0.53	3.11
Sample total	108,912.21	\$1,176.33	100%	100%	\$9.97

Total Benefits – Campbell Creek

Species	Stormwater Benefit (\$)	Air Quality Benefit (\$)	CO ₂ Benefit (\$)	% of Total Population	Total Annual Benefits
Paper birch	985.77	50.27	93.62	53.46	1,129.66
European bird cherry	23.27	2.49	6.95	14.47	32.71
Alder species	157.59	0.28	15.12	11.32	172.99
White spruce	286.17	- 17.10	11.17	10.69	280.24
Willow	173.77	7.41	17.25	9.43	198.42
Black cottonwood	19.36	1.11	2.01	0.63	22.48
Sample total	\$1,645.92	44.46	\$146.12	100%	\$1,836.50



Total Benefits - RJSP

Species	Stormwater benefit (\$)	Air Quality Benefit (\$)	CO ₂ Benefit (\$)	% of Total Population	Total Annual Benefits
White spruce	535.79	- 33.08	29.60	49.15	532.32
Paper birch	407.93	14.54	42.40	33.05	464.87
Black spruce	35.26	- 2.33	2.83	6.78	35.77
Black cottonwood	145.28	12.19	14.49	6.78	171.97
Alder species	45.85	2.27	2.86	2.54	50.98
Willow	6.22	0.01	0.74	1.69	6.96
Sample total	\$1,176.33	-\$6.39	\$92.93	100%	\$1,262.87



Management Plan Goals

- *Conserve the current level of overall tree canopy cover at no net loss and maximize the flow of benefits*
- *Support smart growth and development while preserving the quality of life in Anchorage*
- *Preserve recreational opportunities through responsible vegetation management along trails and other high-use areas*
- *Develop a sustainable, cost-efficient forest management program*

Acknowledgements

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Written by: The Davey Resource Group

A Division of The Davey Tree Expert Company

7627 Morro Road

Atascadero, CA 93422

Phone: (805) 461-7500

Toll Free: 1-800-966-2021

Fax: (805) 461-8501

www.davey.com/drg