Houston Pollen Count in 2021

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Background

- A pollen count is the measurement of the number of grains of pollen in a cubic meter of air
- High pollen counts can sometimes lead to increased rates of allergic reaction for those with allergic disorders
- Houston Health Department laboratory measures air samples to provide a daily report and recorded message for the pollen count within the area
- Pollen count in the daily report includes tree pollen, grass pollen, and weed pollen

https://www.houstontx.gov/health/Pollen-Mold/pollen-archives.html

HOUSTON HEALTH DEPARTMENT

Pollen Spore Count Archives

2022

- January
- February
- March
- April
- May
- June

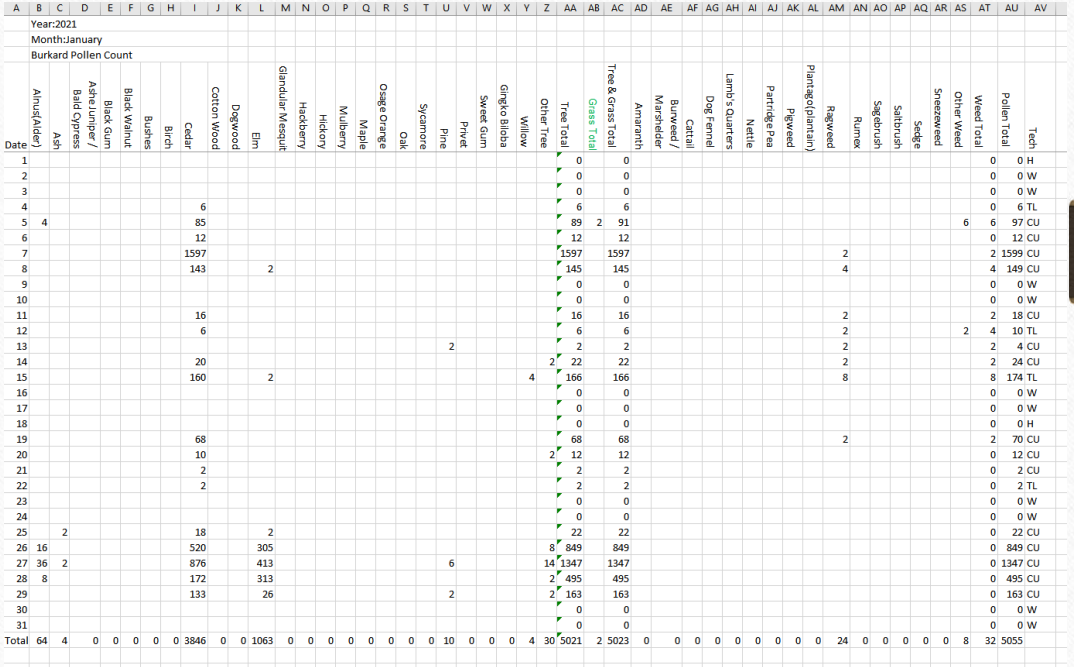
2021

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Data Acquisition & Processing

- Download the 2021 daily pollen count data from Houston Health Department website
  - Spreadsheet data for each month
- Examine the datasets to fix errors
- Analyze and plot monthly pollen count data
  - Identify which contributes the most for the total pollen count

Example Spreadsheet



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
	Year:2021																																															
	Month:January																																															
	Burkard Pollen Count																																															
Date	Alnus(Alder)	Ash	Bald Cypress	Ashe Juniper / Black Gum	Black Walnut	Bushes	Birch	Cedar	Cotton Wood	Dogwood	Elm	Glandular Mesquit	Hackberry	Hickory	Mulberry	Maple	Osage Orange	Oak	Sycamore	Pine	Privet	Sweet Gum	Ginkgo Biloba	Willow	Other Tree	Tree Total	Grass Total	Tree & Grass Total	Amaranth	Marshelder	Burweed / Cattail	Dog Fennel	Lamb's Quarters	Nettle	Partridge Pea	Pigweed	Plantago(plantain)	Ragweed	Rumex	Sagebrush	Saltbrush	Sedge	Sneezeweed	Other Weed	Weed Total	Pollen Total	Tech
	1																										0		0																0	0	H
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	3																										0		0																0	0	W
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	11								16																		16		16										2						2	18	CU
	12								6																		6		6										2					2	4	10	TL
	13																				2						2		2										2						2	4	CU
	14								20																	2	22		22										2						2	24	CU
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	16																										0		0																0	0	W
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	18																										0		0																0	0	H
	19								68																		68		68										2						2	70	CU
	20								10																	2	12		12																0	12	CU
	21								2																		2		2																0	2	CU
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	23																										0		0																0	0	W
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	27	36	2						876			413									6					14	1347		1347																0	1347	CU
	28	8							172			313														2	495		495																0	495	CU
	29								133			26									2					2	163		163																0	163	CU
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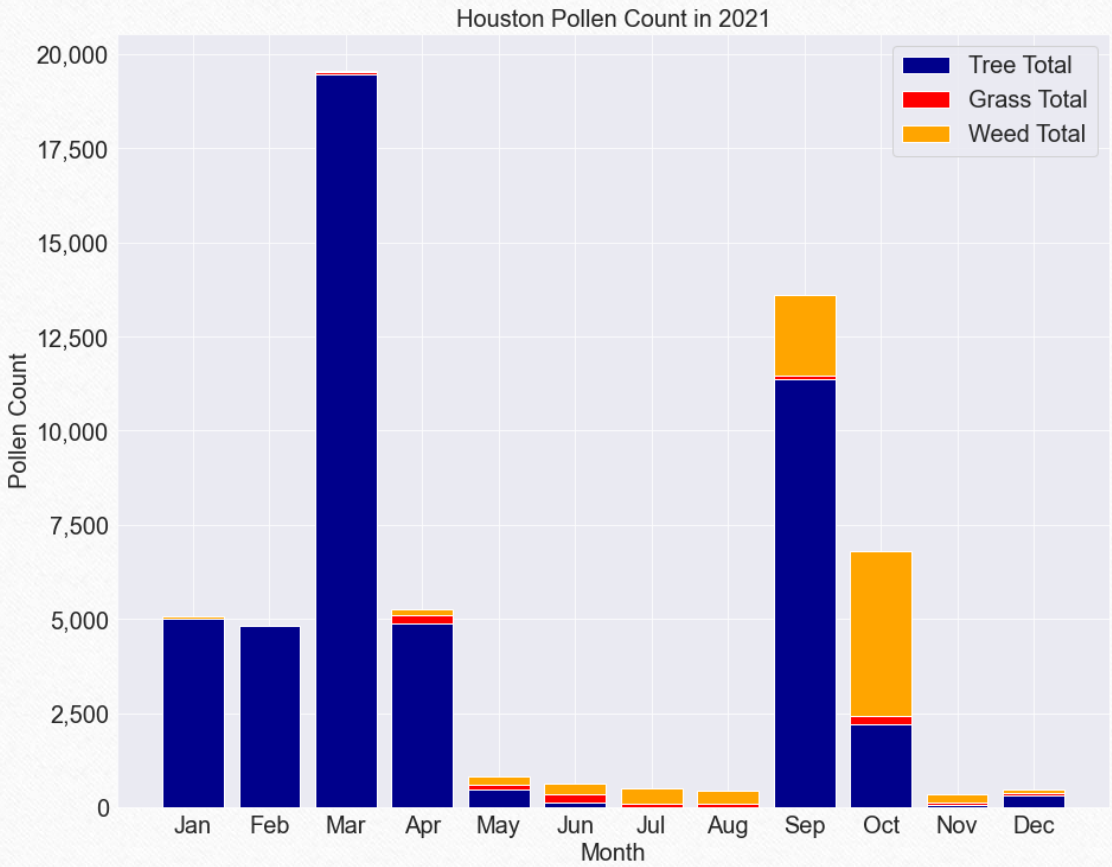
	31																										0		0																0	0	W
	Total	64	4	0	0	0	0	0	3846	0	0	1063	0	0	0	0	0	0	0	0	10	0	0	0	4	30	5021	2	5023	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	8	32	5055	

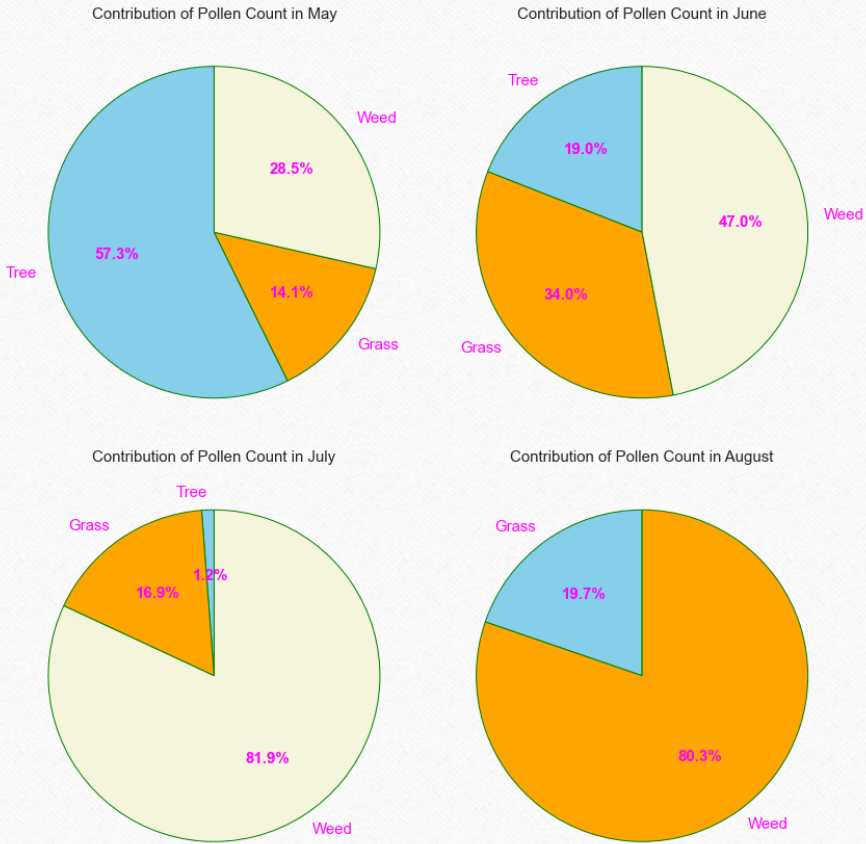
Pollen Count

- March has the highest pollen count among all months, followed by September
- January, February, April, and October also have higher pollen count
- May, June, July, August, November, and December have lower pollen count



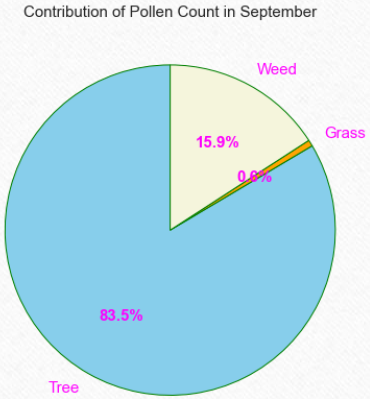
Contribution to Pollen Count

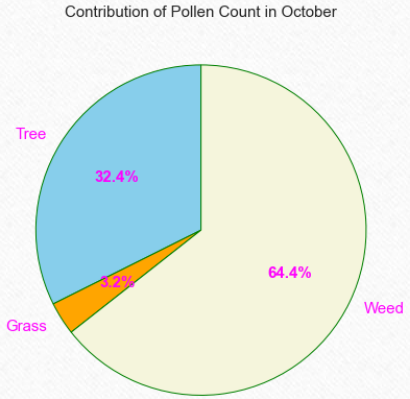
- From January to May, tree pollen is the primary contributor to the total pollen count
- From June to August, weed pollen is the primary contributor to the total pollen count, followed by grass pollen

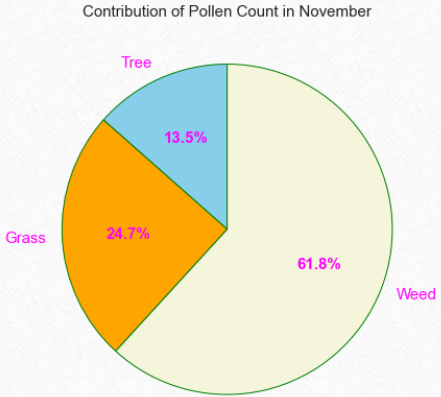


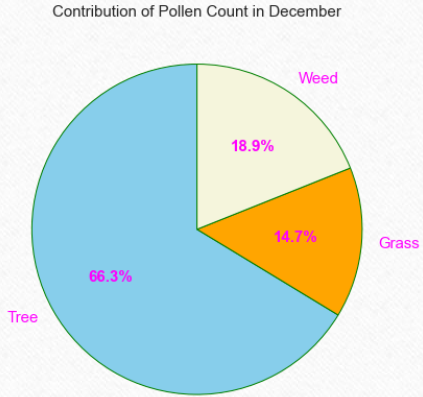
Contribution to Pollen Count

- Tree pollen is the primary contributor to the total pollen count in September and December, followed by weed
- Weed pollen is the primary contributor to the total pollen count in October and November



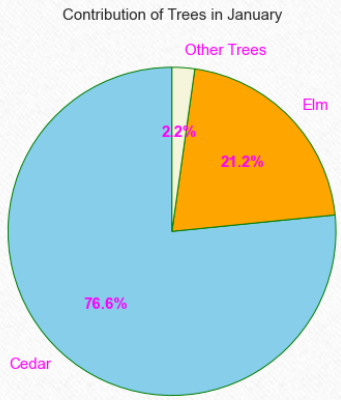


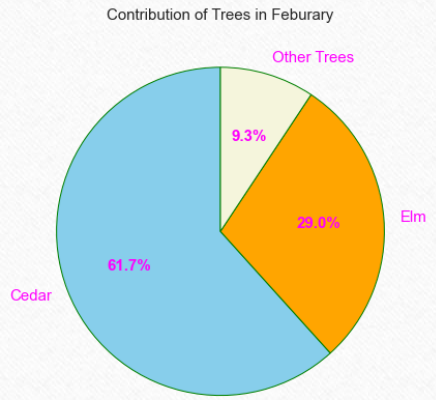


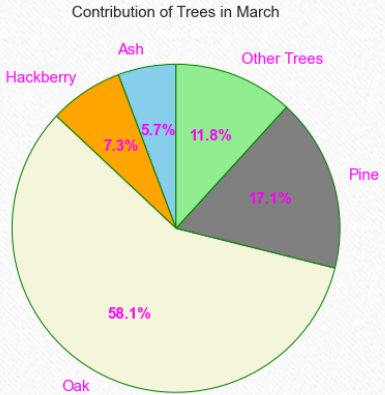


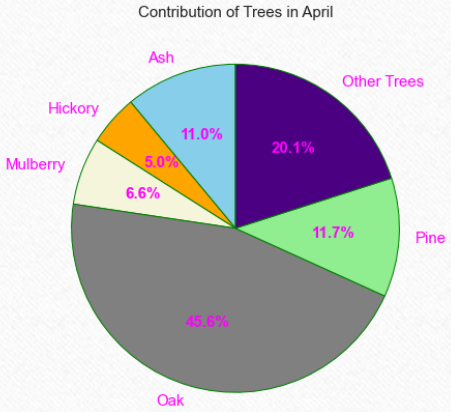
Contribution to Tree Pollen Count

- Cedar and Elm are the primary contributors to the tree pollen count in January and February
- Oak and pine are the primary contributors to the tree pollen count in March and April



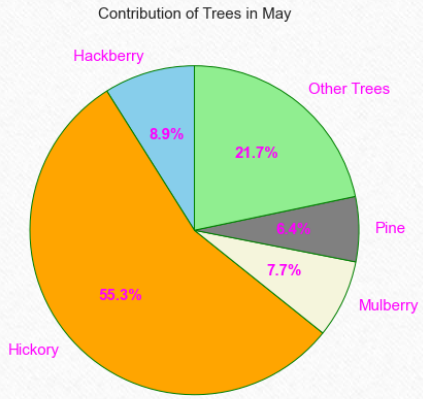


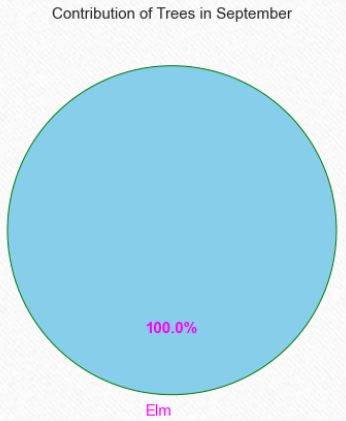


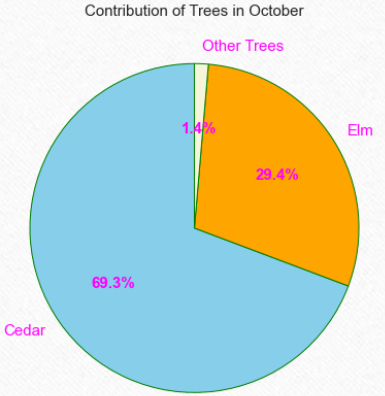


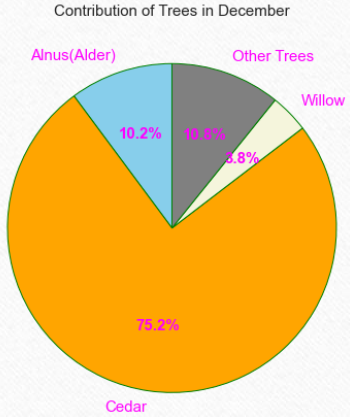
Contribution to Tree Pollen Count

- Hickory is the primary contributor to the tree pollen count in May
- Tree pollen is negligible in June, July, and November
- Elm is the primary contributor to the tree pollen count in September
- Cedar is the primary contributor to the tree pollen count in November and December



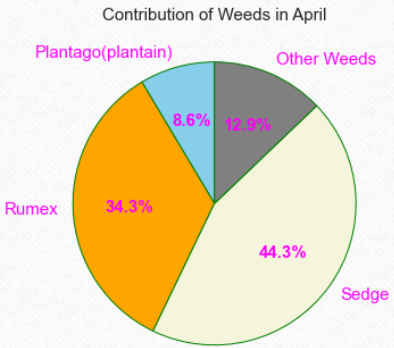


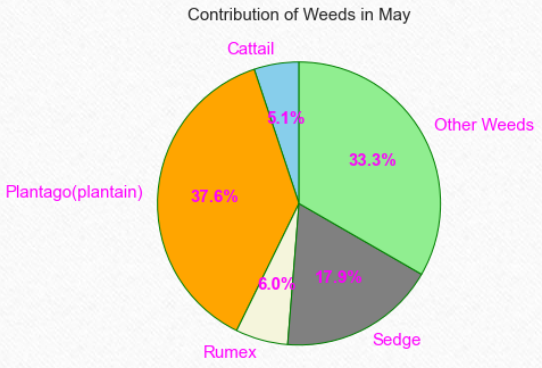


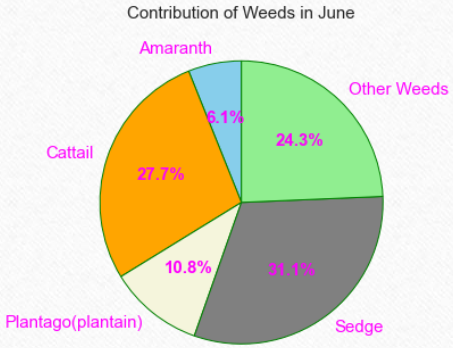


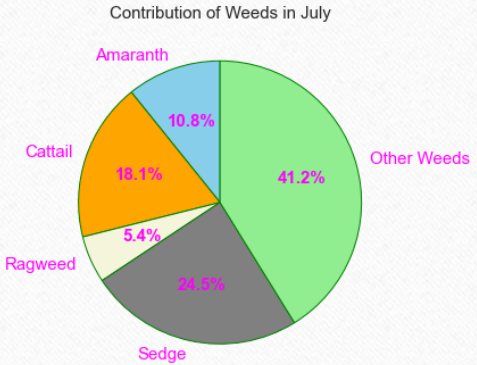
Contribution to Weed Pollen Count

- Weed pollen is negligible in January, February, March, and December
- Sedge and Rumex are the primary contributors to the weed pollen count in April
- Sedge, Cattail, and Plantago are the primary contributors to the weed pollen count in May, June, and July



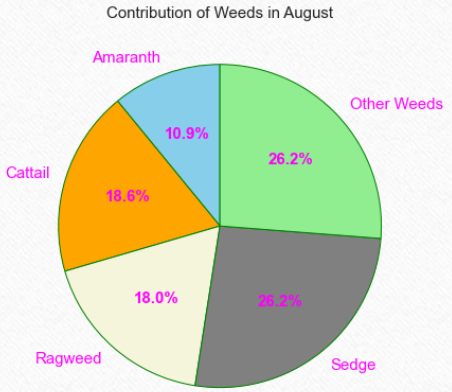


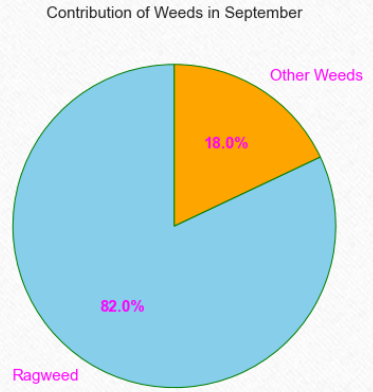


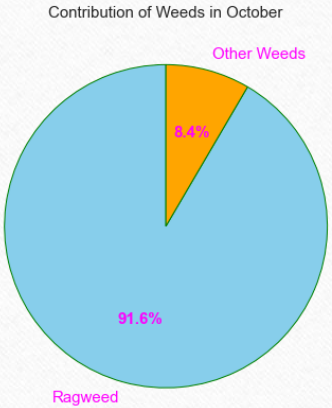


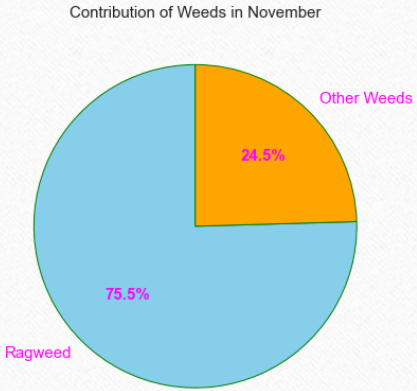
Contribution to Weed Pollen Count

- Sedge, Cattail, and Plantago are the primary contributors to the weed pollen count in May, June, and July
- Ragweed is the primary contributor to the weed pollen count in September, October, and November









Summary

- Pollen count is higher in late winter, spring and fall and lower in summer
  - March and September have the highest pollen count
  - January, February, April, and October also have relatively higher pollen count
- Tree pollen is the primary contributor to the total pollen count in late winter & spring, weed pollen is the primary contributor in summer & late fall, and grass pollen provides a small contribution in summer
- Cedar and elm are the primary contributors to the tree pollen in fall & winter, while oak is the primary contributor to the tree pollen in spring
- Ragweed is the primary contributor to the weed pollen count in fall, while Sedge, Cattail, and Plantago are the primary contributors to the weed pollen count in late spring & summer