

# Maple Syrup Season 2022 – Summary

by

**Stephen G. Saupe**

CSB/SJU Biology Department  
Collegeville, MN 56321; [ssaupe@csbsju.edu](mailto:ssaupe@csbsju.edu)

**Date:** June 11, 2022

## **Introduction/Overview**

This report documents the activities of the Saint John's Maple Syrup operation during the 2022 season. This was the 80<sup>th</sup> year since the monks of Saint John's and their friends began making syrup (**Figure 1**). It is perhaps fitting that the symbol for an 80<sup>th</sup> anniversary is a tree (Oak Anniversary), though admittedly, not one that provides sap for syrupmaking.

The Oak Anniversary of the operation was, by any measure, a great success. Not only was the operation a model of Benedictine ideals, but we also had an outstanding production year. We produced the fourth largest amount of syrup (506 gallons) in our 80-year history and it was the second-best year based on the amount of syrup per tap (0.33 gallons/tap). It was especially nice to get the crew back together again since the operation was idle in 2021 due to COVID-19.

## **Staff**

Br. Walter Kieffer, OSB, was the leader of the operation (**Figure 2**). Incredibly, this was his 61<sup>st</sup> year making maple syrup at Saint John's! Br. Walter was assisted by a dependable core group who helped with every phase of the operation. The crew has worked together for years and has settled into specific roles, which include the sap-haulers (Gary Gillitizer, Darrell Ashfeld, & Mark Ludowese; **Figures 3 & 36**), fireman (Jim Preusser, **Figures 4 & 35**), and chief cooker (Dan Weber, **Figure 4 & 35**). Harold Zipp, Jean Lavigne, and Steve Saupe assisted with assorted jobs especially syrup juggling and filter cleaning, while Larry Huls frequently worked in the field collecting sap and repositioning buckets (**Figure 5 & 35**). In addition, staff from Outdoor U including Director John Geissler, Brother Jeremy Welters, and naturalist Amy Shook provided assistance (**Figure 6**). Snowbird Bill Mock was available for pre- and post-season help.

In addition to the Core Crew, many volunteers (*including CSB/SJU students and local community members*) helped with various phases of the operation (**Figure 7**). These volunteers donated 656 hours (**Table 4**) and were rewarded 'sweetly' at the end of the season by the Outdoor University (**Figure 33**). Including the time volunteered by the Core Crew, 1562 total hours went into the production of Saint John's maple syrup in 2022 (**Table 4**). Or in other words, 3.1 volunteer hours was invested in every gallon of our syrup (**Table 3**). And, these figures don't include the time of the syrup boss, Br. Walter, or Outdoor University staff.

Sarah Gainey, Outdoor University, does an amazing job recruiting volunteers. Potential volunteers sign up to receive alerts via the Outdoor University website. After consulting with Brother Walter and John Geissler about what needs to be done, Sarah sends out an email to those who have signed up

for our mailing list. In 2022, Sarah sent out about 22 updates about volunteer work opportunities in the sugarbush.

### **Tapping**

Like the past few years, the Core Crew did most of the tapping. They were also assisted by some volunteers (**Figure 7**). Taps were placed beginning on March 8 and by the end of the following day about 1200 taps had been installed. By the end of the season, another 250 taps were installed by various visitors and educational groups, for a total of 1540 taps (**Table 3 & 7**).

A map of tap location (**Figure 8**) was prepared by Conal Brady, a Saint John's senior environmental studies major. This beautiful map shows the distribution of spiles throughout the Saint John's sugarbush. One notable difference this year is the expansion of tapping in the east part of the sugarbush (called *Far Dam*).

Like 2020, the majority of taps were "drop buckets" (**Figure 9**). One particular problem this year was that many were blown over during heavy winds (**Figure 10**). Sap sacks, which comprised about 15% of the total, were used for the education taps in Kinderwald, Walterwald, East & West Horseshoe and the Pond.

### **Pulling Taps/Season Length/Clean Up**

The taps were pulled on April 19<sup>th</sup> (**Table 3 & 7**). The maple season, from first sap collection to last sap collection was 33 days, making it the fifth-longest (**Table 7 & Figure 11**) and more than a week longer than average (25 days). There is a slight trend toward increasing length of sap collecting seasons (**Figure 11**). As expected, there is a trend that if the season begins late, as did this one, then it tends to run later (**Figure 12**).

Clean-up went very quickly thanks to our large group of volunteers and bucket-washer. Cleaned supplies were loaded into our new storage unit, a shipping container (**Figure 13**) that was moved to the site in May 2020 to serve as a supply storage facility. We stored our supplies from 2020 in it and it worked great – there was no evidence of mice and everything was well-protected.

### **Sap Production**

Sap production data, as is tradition, were recorded on scrap wood (**Figure 14**). The 2022 data are summarized in **Tables 1, 3, & 5**. Sap data for all years for which we have records are summarized in **Table 7** and record-setting seasons are summarized in **Table 8**.

Our first sap collection was on March 19<sup>th</sup> (**Table 3 & Figure 15**), which is typical. Compared to our previous season (2020), the 2020 the season was over before our season even began this year. This is partly because 2020 was an early year, but also because COVID-19 forced us to close early in 2020.

Historically, the peak of the maple season at Saint John's is the last week of March and first week of April. This is the time period during which the greatest percentage of days are likely to be sap collection days (**Figure 16**) and greatest amount of sap (**Figure 17**) are expected. This year followed that pattern.

The midpoint of this season (April 4<sup>th</sup>) – the date on which 50% of the yearly sap is collected – was also typical (**Table 3**). Though both the start and midpoint of the season were typical, the season was longer than average (*see above*).

The midpoint of the sap collection season has shown a slight trend to being earlier (**Figure 18**). Though this suggests that climate change has pushed our season slightly earlier, the relationship is not strong. However, our data clearly show that the warmer the mean temperature during the sap season, the earlier will be the sap collecting season (**Figure 19**). With global warming, the sap season at Saint John's will definitely move earlier. Further, these data suggest that a good predictor of when to expect sap is the mean average temperature of the early sap season.

A total of 18,375 gallons of sap was collected in 2022 (**Tables 1, 3, & 5**). The largest daily sap collection during the season was 3,045 gallons on the last day, which is unusual to have a large sap run so late in the season. This is another reflection of the longer than average season.

Based on the number of taps, it was an above-average year for sap production. We collected 11.9 gallons of sap per tap compared to our average of 7.5 (**Table 7**), or about 59% more sap than expected.

### **Syrup Production**

Syrup production data were, like the sap data, recorded on a scrap board (**Figure 34**). Our first boil of the year was Mar 21<sup>st</sup> and we jugged our first syrup the following day (**Table 6 & Figure 34**). By season end, we produced 563 jugs of syrup that went into the cellar (**Table 6**). Since we bottle into a mixture of various-sized containers (gallon, three-liter, four-liter), this equated to 505.6 gallons of syrup (**Table 6 & 11**). In other words, we produced 10.2% fewer gallons of syrup than the number of jugs that were bottled. The actual difference between the number of jugs and gallons is due to the types of containers used. Note that prior to 2015, we didn't keep track of the type of jug we used, so any data reported for syrup may differ by about 10%.

Another indicator that this was a long season is the time between the first and last syrup production. The average is 21 days, but this year it was 34, which is the third longest on record (**Table 6**). During this time, we jugged 61 batches of syrup. Not surprisingly, this was also the third highest on record (**Table 6**).

### **Was it a Good Year?**

Definitely, yes. Our historic syrup production is 0.19 gallons of syrup/tap or 0.78 quarts of syrup/tap (**Table 7**). In 2022 we produced 1.31 qt/tap, or 68% more syrup per tap than average.

The sugar concentration of the sap, which is calculated using the Rule of 86, was slightly higher (2.37% = 2.4 Brix) than average (2.2 Brix; see **Table 7**). Though our calculated season average sugar concentration was 2.4 Brix, whenever we directly measured the sap sugar concentration it was considerably higher (see **Figure 14; Table 5**) and averaged 2.9 Brix. Though some of this sugar concentration can be attributed to discarding ice from the sap (**Figure 20**), the sugar concentration of fresh sap was always measured at least 2.9 Brix or higher.

As a consequence of the higher sap sugar concentration, our sap/syrup ratio was higher than average, too. This year we boiled 36.3 gallons of sap to produce a gallon of syrup compared to our average value of 39.9 (**Table 7**).

### **Syrup Analysis**

We save a sample of nearly every batch of syrup that is jugged during the season (**Figures 21 – 23**). This year we jugged syrup 61 times on 13 different days (**Table 6**). Following Minnesota Maple Syrup Producer Association (MMSPA) guidelines for judging entries at the MN State Fair, each sample was analyzed for clarity, color, density and flavor (**Figure 24**).

**Clarity** – The clarity of syrup this year was excellent. All of the samples (**Figures 22 & 23**) were clear and lacked any debris or other foreign materials.

**Color/Grade** – To determine color, samples were measured with a Hanna digital color grader to determine the %Tc. Nearly three-quarters of the samples were “amber” (75-50 %Tc) (**Figure 25**). About a quarter of samples were “dark” (50-25 %Tc) while a small fraction was “very dark” (<25% Tc). We made no “golden” syrup (>75% Tc). These results were very typical for the syrup we make at Saint John’s; we primarily make amber syrups.

A graph of the %Tc shows that the first samples from the evaporator were slightly darker in color (**Figure 26**). This is typical as the cooking system gets flushed with sap. Midseason samples were beautiful amber syrups with a high %Tc, approaching ‘golden.’ As the season progressed, the color gradually darkened until about April 19<sup>th</sup> (**Figure 26**). Again, this is the typical pattern – syrups typically get progressively darker during the season due to increased microbial contamination in the sap. One interesting and unusual phenomenon this year is that the syrups got lighter at the end of the season. This likely reflects the cooler weather which minimized microbial growth in the sap.

Anecdotally, this year our sap quality was some of the best we’ve seen. Throughout most of the season, the sap was crystal clear and had a high sugar concentration (**Figure 27**).

**Density** – Maple syrup should have a density of between 66 – 68.9 Brix to prevent spoilage and crystallization. The mean density of all the syrup samples was 67.2 Brix. Four samples were below density.

**Flavor** – The majority of samples were tasted for flavor (**Figure 24**). No off-flavors were detected in any of the samples that were tasted. As always, Saint John’s maple syrup tastes great.

### **Sweet Predictions Award**

At the beginning of the season the crew often has a contest to predict the amount of syrup we will make. Unfortunately, we didn’t have a chance to organize it this year. A listing of past winners is given in **Table 10**.

### **Festivals & Celebrations**

Outdoor University hosted one festival this year. Due to COVID-19 it was only open to CSB|SJU students. It was a great success with about 250 participants (**Table 4, Figure 28**). Students from the

BIOL380 maple syrup course set up a series of informational displays (**Figure 28**).

### **Publicity/Honors**

Articles and publications about the 2022 (and 2021) Saint John's maple seasons include the following:

- Anon. (2021). Continuing sweet traditions. *The Record*. March 19, 2021, p 1.
- Anon. (2021). *The Abbey Banner*. Winter 2020-2021, p 34.
- Anon. (2022). Slow arrival of spring in Collegetown makes for a good season of maple sap harvesting from the Abbey's sugarbush. *News from St. John's Abbey*. Email received Tuesday June 7, 2022.
- Glenzinski, Tess (2022) Festival brings back sweet traditions. *The Record*, April 3, 2022 (<https://csbsjrecord.com/2022/04/festival-brings-back-sweet-traditions/>).
- Saupe, Stephen (2021) St. John's Maple Syrup: A Brief History. *Crossings* 47: 5-6 (February).
- Saupe, Stephen (2021) The virtues of Minnesota Grown Maple Syrup. Electronic newsletter, *Minnesota Grown*. March 2021. (<https://minnesotagrown.com/pick-of-the-month/the-virtues-of-minnesota-grown-maple-syrup/>).

### **Maple Sap Award**

This award is traditionally bestowed on the crew member who does something "less than brilliant." For examples, see the listing of past winners (**Table 9**). There were four nominations this year. Br. Walter received not one, but two nominations, both related to his expertise with the skidloader. While clearing snow near the sugarhouse he backed the Bobcat into the steps smashing the railing (**Figure 29**). Br. Walter also tipped the Bobcat while plowing roads in the sugarbush. John Geissler received a nomination for losing the trailer in the woods when turning around the tractor (**Figure 29**). Steve Saupe received a nomination for pouring jug cleaning water back into the evaporator thinking it was hot sap. No winner was selected, though a good case can be made that any person with multiple nominations in the same season certainly deserves this prestigious honor.

### **Education & the Community-at-Large**

Educational and community events were scaled back compared a typical year due to COVID-19. As a consequence, no school groups were permitted inside the sugarhouse. However, Outdoor U created a wonderful outdoor classroom (**Figure 30**) where 830 visitors from preK-college had the opportunity to experience maple syruping at Saint John's (**Table 4**). Among the classes that visited the operation were BIOL201 labs (**Figure 31**), the Natural History of Maple class (BIOL375) on multiple occasions, and ENVR300z. There were also ISA and IWL groups that participated in naturalist-led tours on March 19.

The Outdoor University program does a great job to promote the operation. Among other things, they create "Crew" buttons (**Table 12**) and host an assortment of activities. Among the activities this year were a tour of the maple operation, maple syrup lattes in the Schu, maple festival, maple syrup trivia, and a raffle (**Figure 32**).

### **Upgrades**

As always, we made a few improvements to the operation. At the end of the season new firebrick was installed in the evaporator.

# Tables, Figures & Appendices

*(Tables appear first, followed by Figures, and then Appendices. Unless otherwise indicated, all images, figures, and tables are provided by SG Saupe)*

**Table 1. Sap Collection Data – Spring 2022**

Date	Sap collected (gal)
Mar 19	650
Mar 21	1535
Mar 26	845
Apr 1	900
Apr 2	2700
Apr 3	1575
Apr 4	1250
Apr 5	1725
Apr 9	900
Apr 11	1125
Apr 12	745
Apr 18	1380
Apr 21	3045
<b>Total (gal)</b>	<b>18,375</b>

**Table 2. Syrup Production Data – Spring 2022**

Date	Syrup (gals)
Mar 22	25.2
Mar 26	14.2
Apr 2	70.5
Apr 3	56
Apr 4	39.8
Apr 5	34.5
Apr 6	30.4
Apr 11	49.3
Apr 13	36.0
Apr 19	35.2
Apr 21	47.4
Apr 22	43.5
Apr 23	23.7
<b>Total (gal)</b>	<b>505.6</b>

**Table 3: Production Statistics Summary – Spring 2022**

Spiles (5/16ths)	1540
# sap collection days	13
Sap collection dates	Mar 19 – Apr 11
Sap Season length (days)	33
First tapping day	Mar 8
Day taps pulled	April 19
Tanker loads of sap	85
Day on which 50% of annual sap collected	Apr 4
Total sap collected (gal)	18,375
Syrup produced (gal)	505.6
Batches of syrup finished	61
Volunteer hours per gallon syrup	3.1
Ratio (sap/syrup)	36.3
Sugar concentration (%)	2.37

**Table 4: Saint John's Maple Syrup Operation Volunteers & Visitors – Spring 2022**

Volunteers	n/a
Volunteer hours	656
Core Crew hours ( <i>excluding Br. Walter &amp; SJOU staff</i> )	906
Total Volunteer hours	1562
Festival ( <i>includes visitors, staff, volunteers</i> )	250
Student tours ( <i>pre K – 12, includes teachers &amp; chaperones</i> )	565
Other tours ( <i>incl. post-secondary; biology labs, maple course</i> )	265
Total Visitors	1080

**Table 5. Sap Data from 2022.** The yellow-highlighted data show the date on which 50% of the yearly total sap was collected.

nth day of year	DATE	Sap Production			Gal partial load	GALLON	Cumul	[Sugar]%	
		Full Loads	Partial Loads	Ttl loads					
78	19-Mar	2	1	3	200	650	650	2.2	
80	21-Mar	6	1	7	185	1535	2185		
85	26-Mar	3	1	4	170	845	3030	3.0	
91	1-Apr	4		4		900	3930		
92	2-Apr	12		12		2700	6630	3.0	
93	3-Apr	7		7		1575	8205	2.9	
94	4-Apr	5	1	6	125	1250	9455	3.0	50% day
95	5-Apr	7	1	8	150	1725	11180	2.8	
99	9-Apr	4		4		900	12080		
101	11-Apr	5		5		1125	13205	2.8	
102	12-Apr	3	1	4	70	745	13950	3.0	
108	18-Apr	6	1	7	30	1380	15330	3.2	
111	21-Apr	13	1	14	120	3045	18375	2.8	
								2.9	Mean [Sugar]



**Table 6. Syrup Data from 2022**

DATE	nth day of year	Batch	Time	Syrup Production				Total (jugs)	Total (gallons)	Total Jugs/day	Total (Gal/day)	Batches finished
				3L	Gal	4L	5 Gal					
22-Mar	81	1	11:45 AM	7		5		12	10.8	27.0	25.2	3
		2	1:15 PM		1	5		6	6.3			
		3	2:30 PM	5	2	2		9	8.1			
26-Mar	85	4	3:30 PM	4		4		8	7.4	16.0	14.2	2
		5	5:00 pm	6	1	1		8	6.8			
2-Apr	92	6	9:00 AM	11		2		13	10.8	80.0	70.5	7
		7	11:30 AM	7	1	3		11	9.7			
		8	1:15 PM	8		3		11	9.5			
		9	2:45 PM	9	2	3		14	12.3			
		10	3:45 PM	8	1	3		12	10.5			
		11	5:00 PM	4	2	5		11	10.5			
3-Apr	93	12	5:50 PM	5		3		8	7.1			
		13	11:45 AM	4		6		10	9.5	62.0	56.0	6
		14	1:15 PM	11		3		14	11.9			
		15	2:15 PM	5	1	4		10	9.2			
		16	3:45 PM	6	1	3		10	8.9			
		17	5:00 PM	4	3	2		9	8.3			
4-Apr	94	18	6:15 PM	5		4		9	8.2			
		19	12:30 PM	7	3	0		10	8.5	45.0	39.8	5
		20	1:30 PM	7		2		9	7.7			
		21	2:30 PM	5	2	1		8	7.0			
		22	3:40 PM	5	1	3		9	8.1			
5-Apr	95	23	5:30 PM	4	1	4		9	8.4			
		24	1:00 PM	3		5		8	7.7	39.0	34.5	4
		25	1:45 PM	4	2	2		8	7.3			
		26	4:00 PM	9		2		11	9.2			
6-Apr	96	27	5:15 PM	9		3		12	10.3			
		28	9:40 AM	7	2	3		12	10.7	35.0	30.4	3
		29	11:45 AM	10	2	2		14	12.0			
11-Apr	101	30	12:45 PM	7		2		9	7.7			
		31	9:45 AM	4		2		6	5.3	55.0	49.3	6
		32	11:00 AM	9		2		11	9.2			
		33	12:15 PM	6		4		10	9.0			
		34	1:30 PM	5	2	3		10	9.1			
13-Apr	103	35	3:40 PM	5		5		10	9.2			
		36	4:30 PM	4		4		8	7.4			
		37	9:45 AM	4		3		7	6.3	41.0	36.0	5
		38	10:50 AM	4	1	2		7	6.3			
		39	12:20 PM	6	1	2		9	7.9			
		40	1:45 PM	4	2	2		8	7.3			
19-Apr	109	41	3:30 PM	9		1		10	8.2			
		42	11:30 AM	5	1	2		8	7.1	38.0	35.2	5
		43	12:15 PM	5	1	2		8	7.1			
		44	12:50 PM	3		3		6	5.5			
		45	2:15 PM	4	2	2		8	7.3			
		46	nt	1		7		8	8.2			
21-Apr	111	47	12:00 PM	4				4	3.2	52.0	47.4	7
		48	12:45 PM	2	3	3		8	7.8			
		49	1:30 PM	4	1	4		9	8.4			
		50	2:45 PM	8	1	1		10	8.4			
		51	3:30 PM	5		3		8	7.1			
		52	4:30 PM	3	1	3		7	6.5			
22-Apr	112	53	5:30 PM	1	1	4		6	6.0			
		54	9:00 AM	2	4	4		10	9.8	47.0	43.5	5
		55	10:15 AM	2		5		7	6.9			
		56	12:00 PM	8		2		10	8.5			
		57	1:20 PM	4		3		7	6.3			
23-Apr	113	58	nt	6	2	5		13	12.0			
		59	1:20 PM	3		4		7	6.6	26.0	23.7	3
		60	2:15 PM	7		2		9	7.7			
		61	3:45 PM	4	1	5		10	9.5			
13											13	
	1285			327	52	184		563	505.6	563.0	505.6	61.0
23-Apr	113.0			11.0	4.0	7.0		14.0	12.3	80.0	70.5	7.0
22-Mar	81.0			1.0	1.0	0.0		4.0	3.2	16.0	14.2	2.0
8-Apr	98.8			5.5	1.6	3.1		9.2	8.3	43.3	38.9	4.7
6-Apr	96.0			5.0	1.0	3.0		9.0	8.2	41.0	36.0	5.0
32												
				259.2	52.0	194.4			505.6			
DATE		Batch	Time	3L	Gal	4L		Total (jugs)	Total (gallons)	total jugs / day	Total (Gal/day)	Batches finished

**Table 7. Summary of Data from All Seasons at St. John's.**

**St. John's Maple Syrup - Summary of Data**  
1942 - present

colored cells are calculations

Year	Make syrup? 1=yes	# of Taps	total syrup (gall)	total sap collection (gal)	Wood used (cords)	Taps placed	Taps Pulled	First Day syrup	last day syrup	Mean Syrup date # days between first & last cooking	# cooking days	batches finished	avg gal per batch	avg gal per cook day	first day sap	last day sap	# sap collecting days	Midpoint Sap Collection	mean sap collection date	Median sap collection date	Length sap season (last - 1st collect day)	# tanker loads	max daily sap collected	min daily sap collected	average gal sap collected per collecting day	average gal sap collected per tap per season	Sap (gal) per tap per season	Syrup (gal) per tap	Syrup (qt) per tap	sap/syrup ratio	syrup/cord	average sugar conc from rule of 86				
1940																																				
1941																																				
1942	1	150	45	1440				28-Mar	12-Apr																											
1943	1	900																																		
1944																																				
1945	1	1750	246	8600				16-Mar	12-Apr																											
1946																																				
1947																																				
1948	1									17-Mar					17-Mar																					
1949	1									7-Apr					7-Apr																					
1950																																				
1951	1		273	9000						26-Apr																										
1952																																				
1953																																				
1954	1	800	210																																	
1955																																				
1956																																				
1957																																				
1958																																				
1959	1	800				17-Mar		7-Mar	10-Apr																											
1960																																				
1961																																				
1962																																				
1963																																				
1964	1	1500	182																																	
1965																																				
1966	1	2200	350	13000																																
1967																																				
1968	1	3100																																		
1969																																				
1970																																				
1971																																				
1972	1		16477																																	
1973																																				
1974	1	3700	369	15379				3-Apr	20-Apr	11-Apr	17	15	63	5.9	24.6	3-Apr	19-Apr	12	9-Apr	9-Apr	8-Apr	16	87.9	2275.0	175.0	1281.6	0.3	4.2	0.10	0.40	41.7			2.06		
1975																																				
1976																																				
1977																																				
1978	1	1850	373	14674		19-Mar	15-Apr	26-Mar	16-Apr	5-Apr	21	14	58	6.4	26.6	22-Mar	15-Apr	13	4-Apr	3-Apr	4-Apr	24	83.9	1943.0	481.0	1128.8	0.6	7.9	0.20	0.81	39.3			2.19		
1979																																				
1980																																				
1981																																				
1982	1	1850	271	9758		16-Mar	26-Apr	2-Apr	24-Apr	14-Apr	22	12	42	6.5	22.6	2-Apr	22-Apr	13	13-Apr	13-Apr	14-Apr	20	55.8	1225.0	350.0	750.6	0.4	5.3	0.15	0.59	36.0			2.39		
1983																																				
1984																																				
1985	1	1950	560	21179		13-Mar	13-Apr	17-Mar	12-Apr	1-Apr	26	17	71	7.9	32.9	16-Mar	11-Apr	17	1-Apr	29-Mar	31-Mar	26	121.0	2100.0	117.0	1245.8	0.6	10.9	0.29	1.15	37.8			2.27		
1986																																				
1987																																				
1988	1	2000	348	12850				23-Mar	8-Apr	30-Mar	16	11	37	9.4	31.6	23-Mar	6-Apr	12	30-Mar	30-Mar	30-Mar	14	73.4	1807.8	175.0	1070.8	0.5	6.4	0.17	0.70	36.9			2.33		
1989																																				
1990	1	1300	364	11384		9-Mar		26-Mar	11-Apr	2-Apr	16	12	47	7.7	30.3	22-Mar	10-Apr	11	30-Mar	31-Mar	30-Mar	19	65.1	1662.5	52.5	1034.9	0.8	8.8	0.28	1.12	31.3			2.75		
1991																																				
1992	1	1600	344	14481				20-Mar	4-Apr	27-Mar	15	12	38	9.1	28.7	19-Mar	4-Apr	15	28-Mar	26-Mar	27-Mar	16	82.7	2100.0	306.3	965.4	0.6	9.1	0.22	0.86	42.1			2.04		
1993																																				
1994	1	1600	308	12598				17-Mar	5-Apr	27-Mar	19	14	45	6.8	22.0	16-Mar	4-Apr	14	28-Mar	24-Mar	24-Mar	19	72.0	1750.0	87.5	899.9	0.6	7.9	0.19	0.77	41.0			2.10		
1995																																				
1996	1	1200	277	10631		13-Mar		31-Mar	24-Apr	12-Apr	24	13	36	7.7	21.3	21-Mar	22-Apr	17	9-Apr	7-Apr	8-Apr	32	60.7	1750.0	87.5	625.4	0.5	8.9	0.23	0.92	38.4			2.24		
1997																																				
1998																																				
1999	1	1200	181	7369		26-Feb	10-Apr	18-Mar	10-Apr	27-Mar	23	12	22	8.2	15.1	26-Feb	8-Apr	19	22-Mar	24-Mar	24-Mar	41	42.1	992.3	105.0	387.8	0.3	6.1	0.15	0.60	40.7			2.11		
2000	1	1200	223	10092				16-Mar	2-Apr	25-Mar	17	9	33	6.8	24.8	6-Mar	30-Mar	10	22-Mar	20-Mar	20-Mar	24	57.7	1925.0	175.0	1009.2	0.8	8.4	0.19	0.74	45.3			1.90		
2001																																				
2002	1	800	107	3413			17-Apr	1-Apr	25-Apr	11-Apr	24	5	12	8.9	21.4	28-Mar	13-Apr	7	8-Apr	4-Apr	6-Apr	16	19.5	1138.0	175.0	487.6	0.8	5.7	0.18	0.71	31.9			2.70		
2003	1	539	146	6519				27-Mar	9-Apr	2-Apr	13	5	17	8.5	29.1	17-Mar	9-Apr	11	30-Mar	28-Mar	29-Mar	23	37.3	1225.0	175.0	592.6	1.1	12.1	0.27	1.08	44.8			1.92		
2004	1	600	99	5513				15-Apr	24-Mar																											

**Table 8. Summary Statistics****Summary of St. John's Maple Syrup Statistics: 1942 – 2022**

*This document provides a summary of data from the St. John's Maple Syrup Operation. Ranges are shown in parentheses. Data prior to 1972 are incomplete because they were destroyed when the original sugar house burned down. The 2020 season was cut short due to COVID-19.*

**General**

First season to make syrup	1942
Number of years since St. John's began making syrup	80
Number of seasons during which St. John's has made syrup	43
Average time (in years) between successive syrup-making seasons	1.9

**Tapping Data**

Average date trees are tapped	7 March (14 Feb – 19 Mar)
Average date taps are removed	14 April (19 Mar – 29 Apr)
Average number of taps ( <i>for all seasons</i> )	1394
Average number of taps ( <i>prior to 2002</i> )	1613
Average number of taps ( <i>since 2002</i> )	1185
Fewest number of taps (& <i>year installed</i> )	150 (1942)
Maximum number of taps (& <i>year installed</i> )	3700 (1974)

**Sap Collection Data**

Average first date of sap collecting	18 March
Earliest date on which sap was first collected (& <i>the year</i> )	18 Feb (2017)
Latest date on which sap was first collected (& <i>the year</i> )	7 Apr (1949)
Average last date of sap collecting	11 April
Earliest date on which sap was last collected (& <i>the year</i> )	19 March (2020)
Latest date on which sap was last collected (& <i>the year</i> )	29 April (2018)
Average date on which 50% of yearly sap is collected	1 April (13 Mar – 17 Apr)
Average number of days during the season on which sap was collected	12.4 (5 – 19)
Average number of days between first and last sap collection (= <i>length of sap production season</i> )	24.8 (9 – 48)

**Sap Volume Data**

Most sap collected, in gallons, during a season (& the year)	21,179 (1985)
Average sap collected, in gallons, during a season	10,365
Average sap collected, in gallons, on a collecting day	830 (308 – 1414)
Most sap collected, in gallons, on a single day (& the year)	3455 (2016)
Average gallons of sap collected per tap	7.5 (2.2 – 14.4)
Average gallons of sap collected per tap per collecting day	0.6 (0.3 – 1.1)

**Sugar House & Evaporator Info**

Year sugar house constructed (first season of use)	1971 (1972)
Year South addition added to sugar house	1999
Year West addition to sugar house completed and wood shed renovated	2009
Teaching Evaporator (Little Larry) size	2 ft. wide x 6 ft. long
Teaching Evaporator (Little Larry) capacity [gallons sap boiled per hour / gallons syrup produced per hour]	20 / 0.5
Production Evaporator (Big Burnie) size	4 ft. wide x 14 ft. long
Production Evaporator capacity [gallons sap boiled per hour / gallons syrup produced per hour]	200 / 5

**Syrup Production Data**

Average gallons of syrup produced during a season ( <i>data for all seasons</i> )	262
Average gallons of syrup produced during a season ( <i>since 2002</i> )	239
Maximum gallons of syrup produced in a season	560 (1985)
Minimum gallons of syrup produced in a season (& the year)	39 (2012)
Average quarts of syrup per tap	0.76 (0.14 – 1.7)
Wood used (gallons syrup / cord burned)	25.0 (21.4 – 28.9)

**Sugar Concentration Data**

Average sap/syrup ratio	39.9 (31.3 – 61.8)
Average seasonal sugar content of sap, in percent	2.2%
Lowest seasonal sugar content of sap, in percent (& the year)	1.4% (2005)
Highest seasonal sugar content of sap, in percent (& the year)	2.7% (1990)

**Table 9. Great moments in Saint John's Maple Syrup History – A Summary of the Maple Sap Award Winners**

Year	Award Winner	Great Moment
2022	Not determined	Nominees – Br. Walter Kieffer for backing the skidloader into the stairpost; John Geissler for losing the trailer when turning the tractor around; Steve Saupe for pouring jug cleaning water back into the evaporator thinking it was sap
2020	COVID-19	For making a mockery of the maple syrup season
2019	Al Meiers	For inadvertently cursing when a kindergarten school group was visiting the shack
2018	Sarah Gainey	Leaving the parking brake on while nearly a dozen people tried to push her out of a slippery parking place
2017	Gary Gillitzer	Wrapping the sap wagon around a tree
2016	Br. Walter Kieffer	Burning Big Burnie's syrup pan
2015	Br. Walter Kieffer	Getting whacked in the head with the handle of a tire jack
2014	Tom Kroll	Forgetting to order desperately need gallon jugs
2013	Gary Gillitzer	Driving a full sap tank into the woods to collect more sap

**Table 10. Summary of the Sweet Prediction Winners**

Year	Award Winner
2022	<i>not done</i>
2020	<i>not done</i>
2019	<i>not done</i>
2018	Mark Ludowese
2017	Ashley Walker
2016	Bill Mock
2015	Br. Walter Kieffer & Al Meiers ( <i>tie</i> )
2014	Br. Walter Kieffer
2013	Bill Mock

**Table 11: Analysis of Syrup Production during the 2022 Season.**

Container size	Number Jugged	% of total jugs	Volume (gallons)
4-liter glass jug	184	32.7	194.4
3-liter glass jug	327	58.1	259.2
Gallon glass jug	52	9.2	52.0
5 gallon	0	0	0
<b>Total</b>	<b>563</b>	<b>100</b>	<b>505.6</b>

**Table 12. Maple Syrup Crew Button Summary (information provided by Sarah Gainey, Saint John's Outdoor U)**

Year	Color	Designer (if known)
2008	Light green	
2009	Light purple	
2010	Light blue	
2011	Bright Orange	
2012	Bright yellow	
2013	Red	
2014	Teal	Teresa Gonia
2015	Green	Maddie Norgaard
2016	Black with white lettering	Natalie & Siri
2017	Dark purple	Pearce Jensen
2018	Craft paper brown	Ella Grote & AnnMarie Backstrom
2019		
2020		
2022	Neon pink	Sara Holmes



**Figure 1.** Seed art work created by Steve Saupe to commemorate the 80<sup>th</sup> anniversary of the Saint John's Maple Syrup operation.



**Figure 2.** Br. Walter Kieffer, OSB, head of the Saint John's Maple Syrup Operation taking a well-deserved coffee break (*left*) and showing the color of syrup in the apple cellar storage area.



**Figure 3.** The sap-hauling crew. *Top left* – driver Gary Gillitzer, *middle left* – heading out to collect sap, *bottom left* – lunch break for Mark Ludowese, Darryl Ashfeld and Gary Gillitzer; and *above right* – Darryl Ashfeld and Mark Ludowese hanging on to the sap wagon as they head out to the field.





**Figure 4.** *Top left* – Fireman Jim Preusser adds wood to the stove. *Top right* – Chief cooker Dan Weber raising the hood to swap out the syrup pan for cleaning. *Bottom* – Dan Weber (left) and Jim Preusser displaying sap collection buckets in which they had just drilled ventilation holes.



**Figure 5.** *Top left* – Larry Huls drains the last drops of sap remaining in a barrel after it had been pumped into the tanker. *Top right* – Harold Zipp waves after clearing snow from the base of a tree to set aa collection pail. *Bottom* – Steve Saupe (left) and Jean Lavigne take time for a selfie.



**Figure 6.** *Top left* – Outdoor University Director John Geissler “doing the diapers,” and *Top right* – positioning collecting barrels in the sugarbush. *Bottom* – Outdoor U naturalist Amy Shook helping to tap trees.



**Figure 7. Volunteers participating in making Saint John's Maple Syrup.** *Top left & middle left* – volunteers preparing to tap trees. *Top right* – John Geissler showing volunteers how to collect sap. *Bottom* – Core crew and volunteers after a long day of tapping.



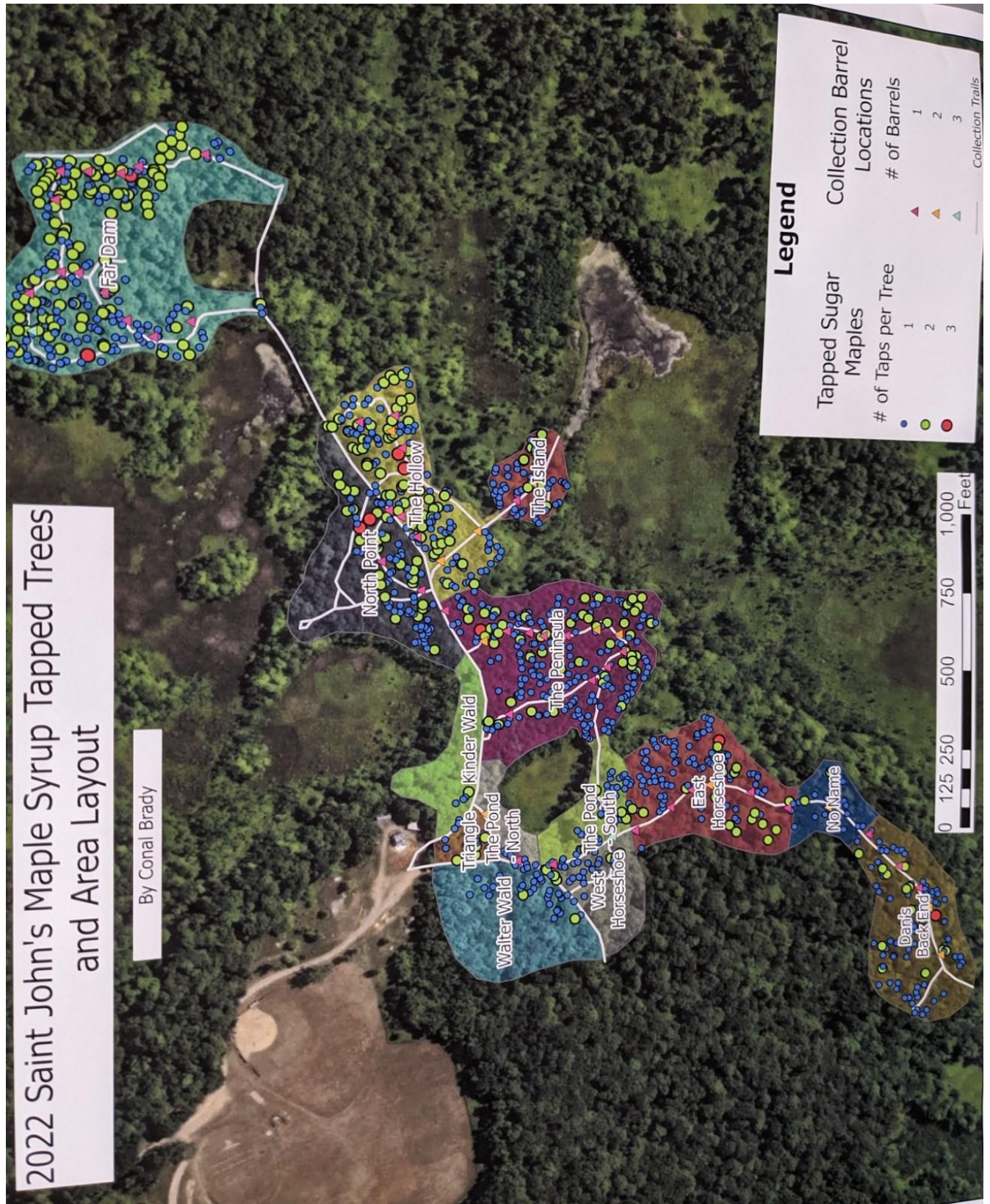


Figure 8. Tapping Map courtesy of Saint John's Senior Environmental Studies major, Conal Brady.

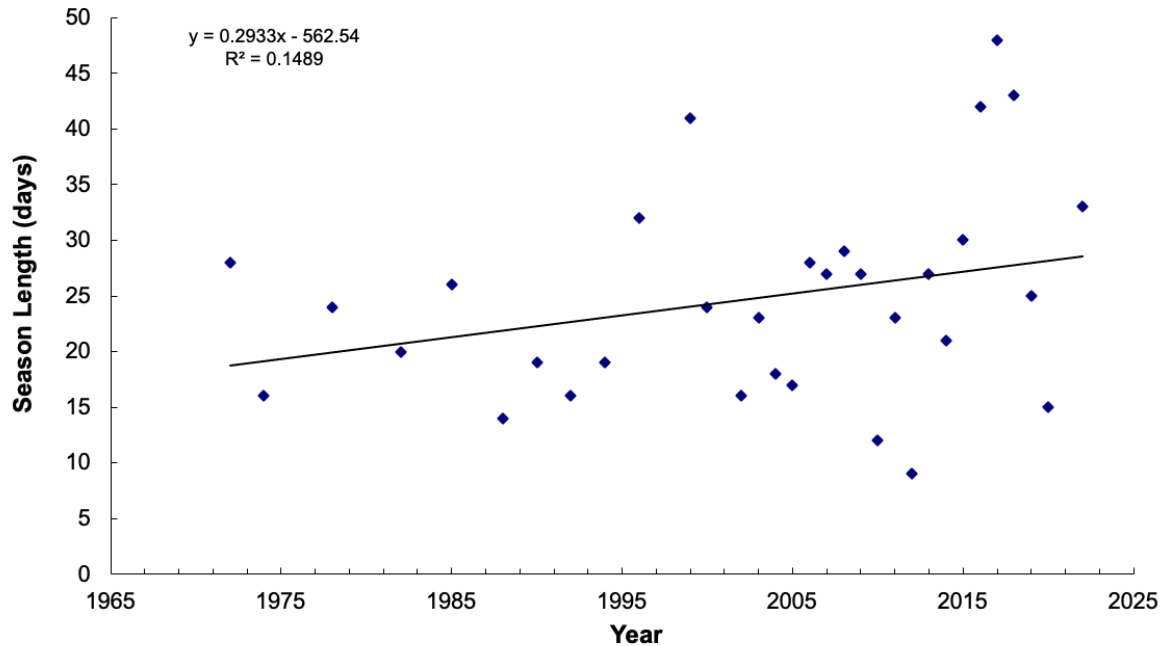


**Figure 9.** *Top* – Drop buckets in the Saint John’s sugarbush. *Bottom* – container of drop spiles waiting to be installed in the sugarbush.

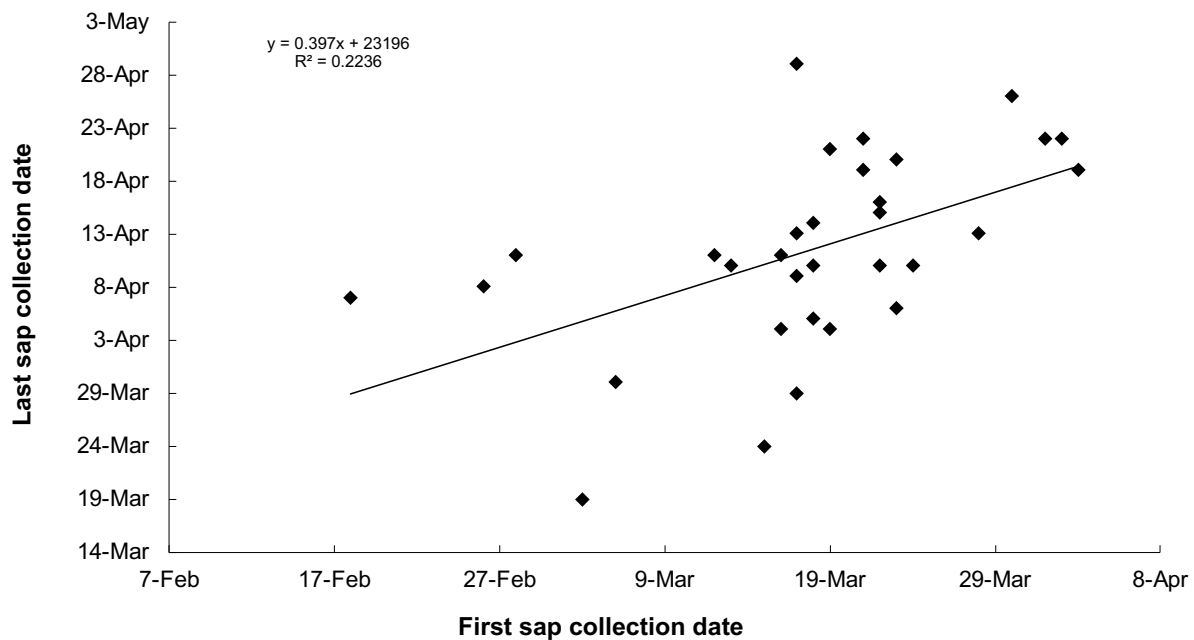


**Figure 10.** *Top* – Buckets that were blown over during a wind storm. *Bottom* – Volunteers picking up buckets blown over in a storm.





**Figure 11.** Graph showing the maple season length (time from first sap collection to the last) versus year. This graph shows that there has been a slight trend in increasing maple syrup season length at Saint John's over time.



**Figure 12.** Graph showing the relationship of the last sap collection date to the first sap collection date. This graph shows that if the sap collecting season begins late, it tends to end late.





**Figure 13.** Shipping container installed in May 2020 that is used by the Saint John's Maple Syrup operation for supply storage.

2022	Sop	
II + 200	3/19	2.2%
HHH I + 185	3/21	
III + 170	3/26	~3.0%
IIII	4/1	
HHH HHH II	4/2	3.0%
HHH II	4/3	2.9%
HHH + 125	4/4	3.0%
HHH II + 150	4/5	2.8%
IIII	4/9	
HHH	4/11	2.8%
III + 70	4/12	3.0%
HHH I + 30	4/18	3.2%
HHH HHH III + 20	4/21	2.8%

2022	Sop	
II + 200	3/19	2.2%
HHH I + 185	3/21	
III + 170	3/26	~3.0%
IIII	4/1	
HHH HHH II	4/2	3.0%
HHH II	4/3	2.9%

**Figure 14.** A piece of scrap wood is traditionally used to record sap production data (left; image courtesy Br. Walter Kieffer). Tick marks denote each load of sap, which is 225 gallons, brought to the sugarhouse from the field. The board is nailed to the sugarhouse wall during the season to make it easy to record data (right).

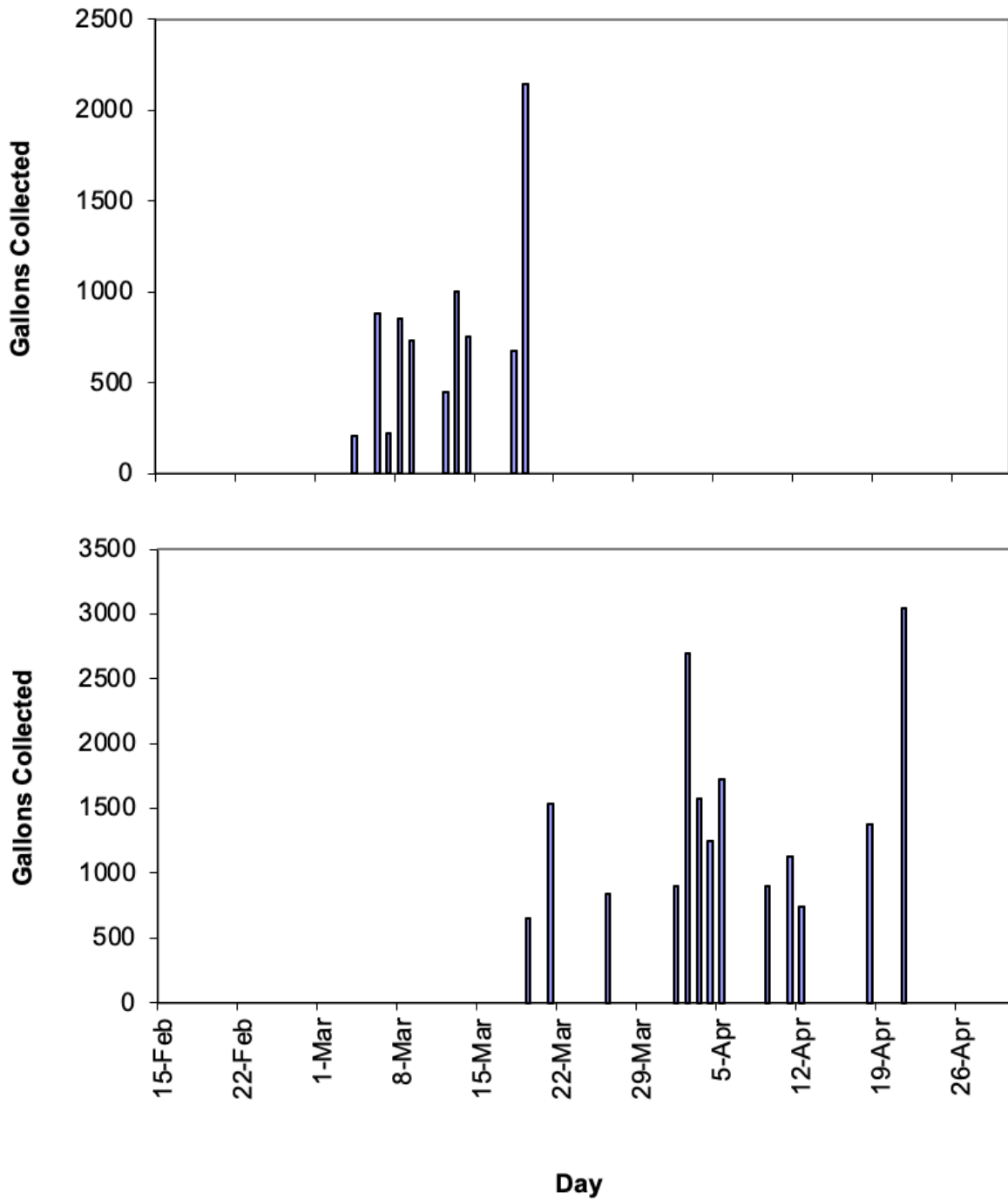
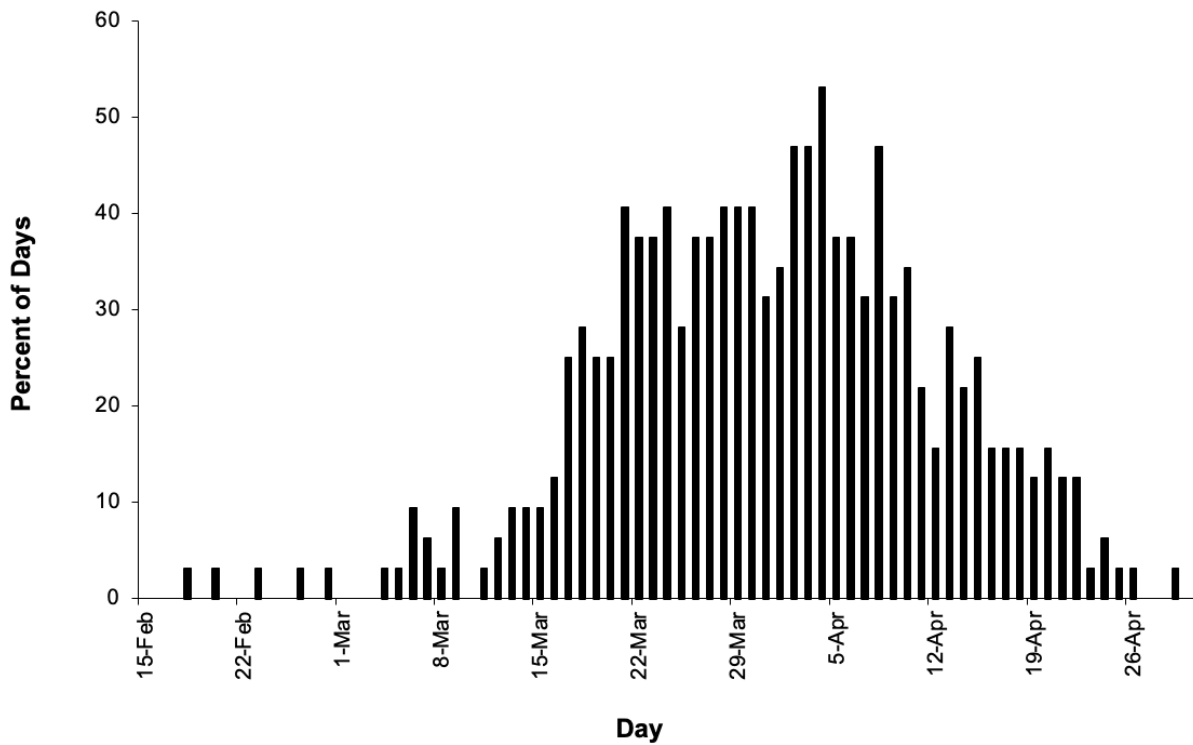
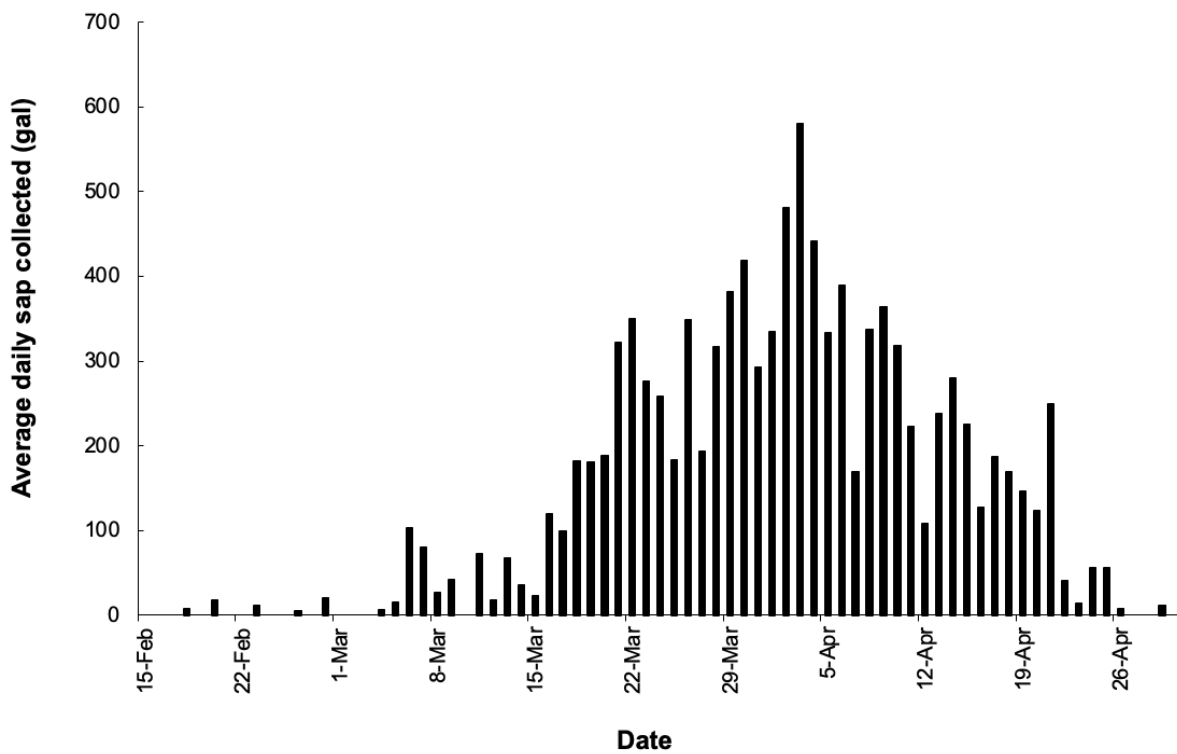


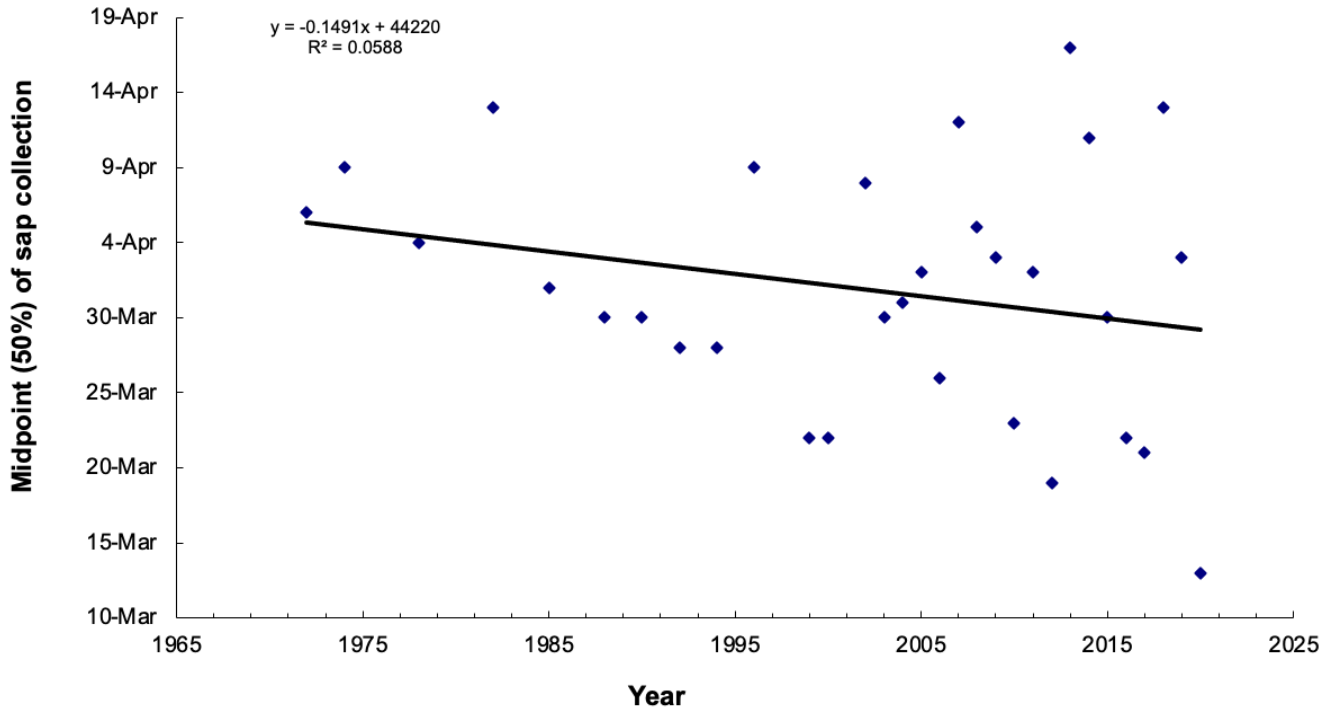
Figure 15. Comparison of sap collection in 2020 (upper) and 2022 (lower).



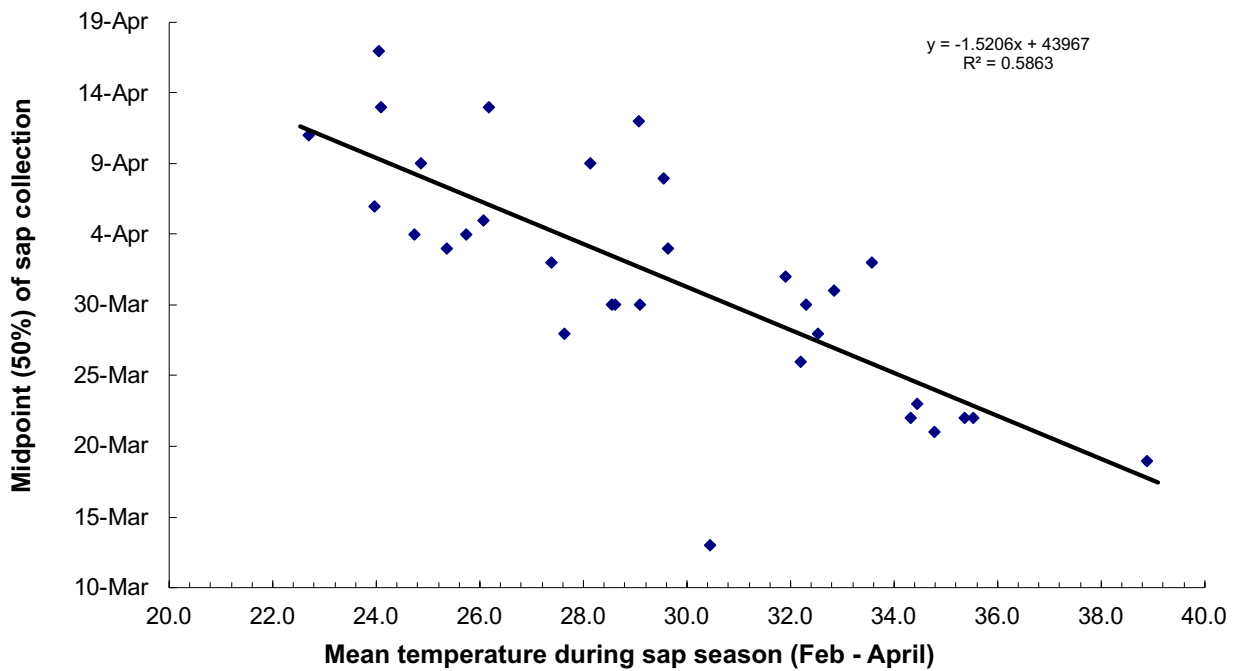
**Figure 16.** Percent of days on a given date from 1972 – 2022 on which sap was collected at Saint John's.



**Figure 17.** Average amount of sap (gallons) collected on a particular day from 1972 – 2022 in the Saint John's maple syrup operation.



**Figure 18.** Graph showing the midpoint of the maple season, the date on which 50% of the sap for the year is collected in the Saint John's maple syrup operation from 1972 – 2022.



**Figure 19.** Graph showing the midpoint of sap collection in relation to the mean temperature during the sap season in the Saint John's Maple Syrup operation from 1972 – 2022.



**Figure 20.** Thick layer of ice that formed in a storage barrel before it could be emptied. Photo taken on March 26, 2022.



**Figure 21.** Samples from each jugging during the maple season (Top image – April 6<sup>th</sup>. Bottom image – April 23<sup>rd</sup>).



**Figure 22.** 2022 samples from batches 1 - 29 during the season. **Top row** – Batch 1, 2, 3, 5, 6, 7, 8, & 9. **Middle row** – 11, 12, 14, 15, 16, 17, 18, 19, & 20. **Bottom row** – 21, 22, 23, 24, 25, 26, 27, 28, & 29. For dates of jugging, see **Table 6**.

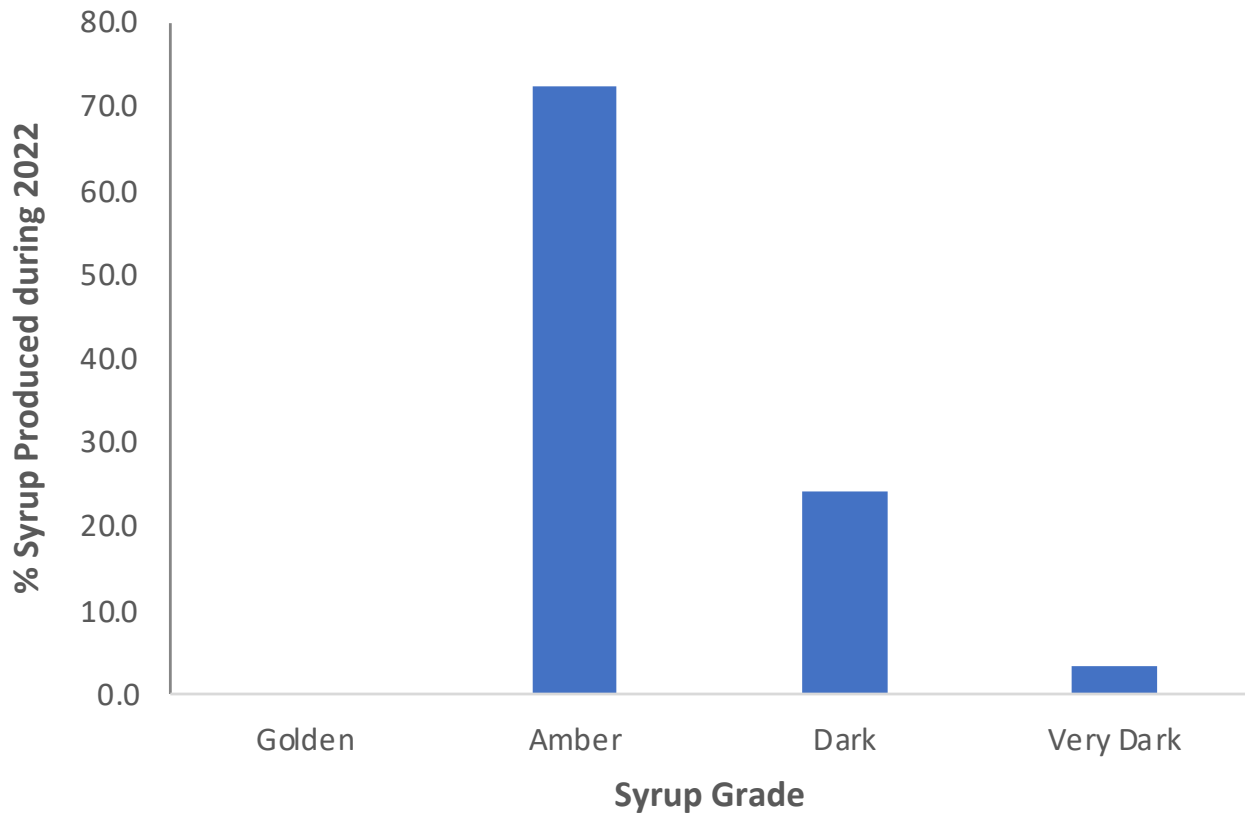




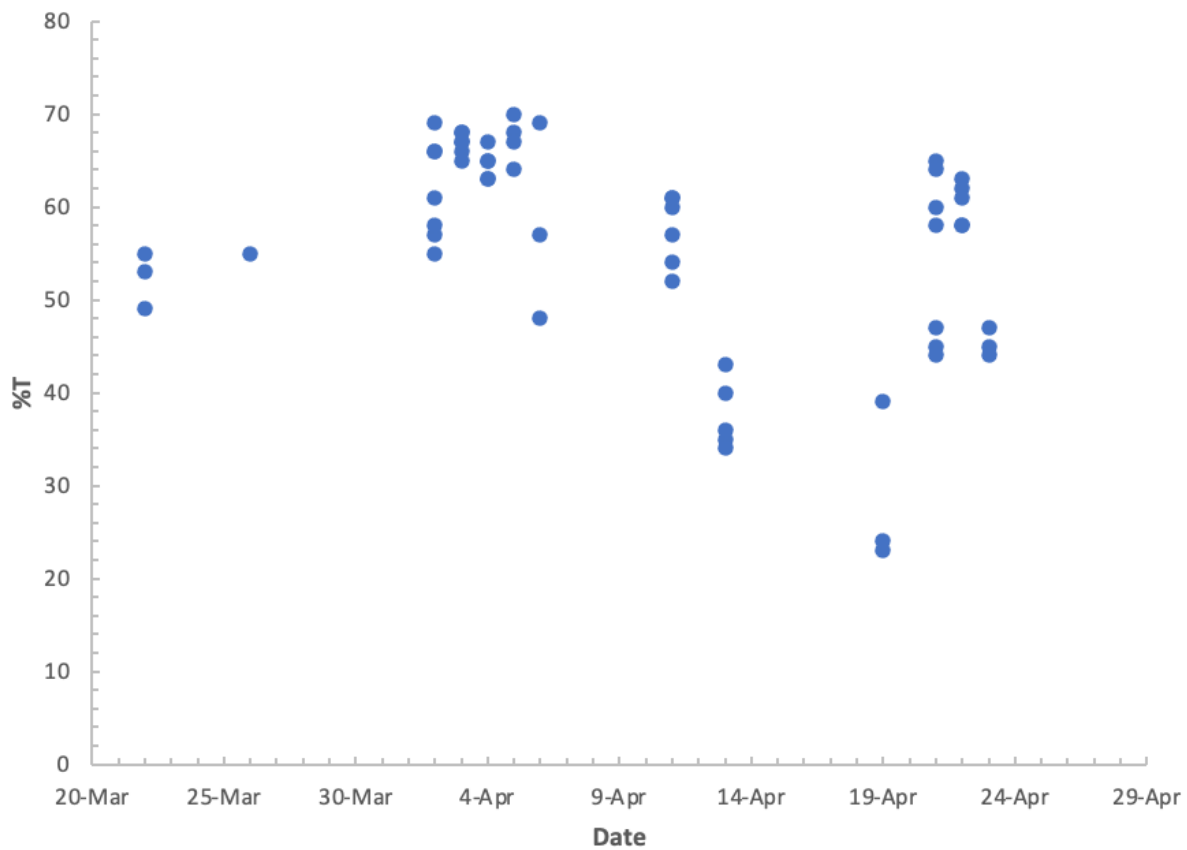
**Figure 23.** 2022 samples from batches 30-61 during the season. **Top row** – Batch 30, 31, 32, 33, 34, & 35. **Second row** – 36, 37, 38, 39, 40, 41, & 42. **Third row** – 43, 45, 47, 48, 49, 50, 51, & 52. **Bottom row** – 53, 54, 55, 56, 57, 58, 59, 60, & 61. For dates of jugging, see **Table 6**.



**Figure 24.** *Top* – Volunteers, led by Steve Saupe (center), analyzing 2022 maple syrup samples. Image courtesy of Kyle Rauch. *Bottom* – Br. Walter using a comparator kit to determine the color grade of a syrup sample.



**Figure 25.** Frequency of syrup grades produced during the 2022 season.



**Figure 26.** Light transmittance (%T<sub>c</sub>) of maple syrup samples during the course of the 2022 season.



**Figure 27.** Hydrometer floating in sap in one of the storage tanks showing the beautiful clarity and high sugar concentration.



**Figure 28.** CSB|SJU Maple Syrup Festival. *Top* – food and information stations. *Bottom* – educational displays set up in the machine shed.



**Figure 29.** *Top* – Dan Weber (left) and Jim Preusser examine the damage done to the steps when Br. Walter inadvertently backed up the skid loader when clearing snow. *Bottom* – John Geissler remembered the trailer on this trip back to the sugarhouse.



**Figure 30.** Outdoor classroom used this year due to COVID-19. Not shown is the barrel-style evaporator purchased last year.





**Figure 31.** Amy Shook teaching a CSB | SJU BIOL 201 class in the outdoor classroom area. Image courtesy Kyle Rauch.



# Maple Syrup Events!

**Mon, 3/22**  
 12:00-3:00  
 Lunch at the Reef:  
 Maple Syrup Latte!

**Tues, 3/22**  
 4:00  
 Dinner at the Reef:  
 Maple Syrup  
 Sundaes for dessert

**Wed, 3/23**  
 7:00  
 Maple Syrup Trivia  
 Gorecki 120

**Sat, 3/26**  
 2:00  
 Maple Syrup  
 Festival

**Wed, 3/30**  
 4:30  
 Brinner at Gorecki:  
 Featuring St. John's  
 Maple syrup

**Raffle**  
 Prizes:  
 T-Shirts  
 Hats  
 Maple Sugar Candy  
 And  
 LOTS AND LOTS OF  
 MAPLE SYRUP!

QR Code  
 Sain  
 Out



OUTDOOR U AND ISA PRESENT

## SUGAR BUSH TOUR

Celebrate the significance of maple tree tapping. learn about and tap trees, and enjoy a sweet treat!

Saturday March 19  
 10:45am-noon  
 Meet at SJU outside the OLC



CSB/SJU  
**MAPLE SYRUP FESTIVAL**

Sat  
 Mar 26  
 2-4 PM

Student only; not open to the public in 2022

OUTDOOR U

**Figure 32.** Maple events sponsored by Outdoor University.



**Figure 33.** *Top* – Syrup bottled by Outdoor U staff and assistants on March 8, 2022. The syrup is used to thank volunteers and also for assorted gifts and prizes. *Bottom* – Syrup was bottled into an assortment of containers. Images courtesy of Kyle Rauch.

Syrup		2022				
Date	#	Time	3L	Gal	4L	Total
3/22	1	11:45A	7	-	5	12
3/22	2	1:15P	-	1	5	6
3/22	3	2:30P	5	2	2	9
3/26	4	2:30P	4	-	4	8
"	5	5:00P	6	1	1	8
4/2	6	9:00A	11	-	2	13
"	7	11:30A	7	1	3	11
"	8	1:15P	8	-	3	11
"	9	2:45	9	2	3	14
"	10	3:45	8	1	3	12
"	11	5:00	4	2	5	11
"	12	5:50	5	-	4	9
4/3	13	11:45A	4	-	6	10
"	14	1:15P	11	-	3	14
"	15	2:15P	5	1	4	10
"	16	3:45P	6	1	3	10
"	17	5:00P	4	3	2	9
"	18	6:15P	5	3	4	9
4/4	19	10:30A	3	3	1	10
"	20	1:30P	3	0	2	9
"	21	2:30P	5	2	1	8
"	22	3:45P	5	1	3	9
"	23	5:15P	4	1	4	9
4/5	24	1:00P	3	-	5	8
"	25	1:45	4	2	2	8
"	26	4:00P	9	-	2	11
"	27	5:15P	9	-	3	12
4/6	28	9:40A	7	2	3	12
"	29	11:45	10	2	2	14
"	30	12:45P	7	-	2	9
4/11	31	9:45A	4	9	2	6
"	32	11:00A	9	-	2	11
"	33	12:15P	6	-	4	10
"	34	1:30P	5	2	3	10
"	35	3:40P	5	1	5	10
"	36	4:30P	4	-	4	8
4/13	37	9:45A	4	1	3	7
"	38	10:50A	4	-	2	6
"	39	12:20P	6	1	2	9
"	40	1:45P	4	2	2	8
"	41	2:30	4	1	2	7
4/19	42	11:30A	5	1	2	8
"	43	12:15P	5	1	3	9
"	44	12:50P	3	1	3	7
"	45	2:15	4	2	2	8
"	46		1	-	1	2
4/21	47	12P	4	-	1	5
"	48	12:45	2	3	3	8
"	49	1:30	4	1	4	9
"	50	2:45	8	1	1	10
"	51	3:30	5	0	3	8
"	52	4:30	3	1	3	7
"	53	5:30	1	1	4	6
4/22	54	9:00A	2	4	4	10
"	55	10:15	2	1	5	8
"	56	12:00	8	-	2	10
"	57	1:20	4	1	3	8
"	58		6	2	5	13
4/23	59	1:20	3	1	4	8
"	60	2:15	8	1	2	11
"	61	3:45	4	1	5	10

Figure 34. Syrup production data are recorded on a scrap board in the Saint John's sugarhouse.



**Figure 35.** Jim Preusser (left), Dan Weber (middle), and Harold Zipp (right) stop for a photo in front of Big Burnie.



**Figure 36.** Mark Ludowese prepping a spile and dropline on tapping day.

## Appendix 1. Saint John's Maple Syrup Mission Statement

The mission of the Saint John's Maple Syrup operation is to continue the long-standing Benedictine tradition of making maple syrup. Since 1942 the monks and their friends have gathered together to tap trees, collect sap and boil it down to produce a heavenly confection that is a testament to the forest stewardship of the Benedictine community. In addition, we strive to provide opportunities for the Saint John's community, including monks, students, and the public at-large, to learn about, and participate in, the process of making this sustainable forest product.



**updated:** May 2012

## Appendix 2: Saint John's Maple Syrup Goals & Objectives



In 2001, Abbot John Klassen, OSB, requested that the Saint John's Arboretum take joint responsibility with the Abbey for the Saint John's Maple Syrup operation. A Mission Statement (*above*) and the following goals and objectives were established:

**Goals.** *The goals of the Saint John's Maple Syrup operation are to:*

1. maintain the tradition of Benedictine syrup-making on campus
2. provide educational opportunities for the Saint John's community including monks, students, staff and the general public
3. provide the Abbey with maple syrup

**Objectives:** *To accomplish the goals elucidated above, the specific objectives of the Saint John's Maple Syrup operation are to:*

1. annually produce maple syrup and welcome visitors in the Benedictine tradition
2. collect sap and make syrup from approximately 1000 taps
3. make enough syrup to meet the needs of the Abbey and Arboretum (including festivals, visitors, and guests) and to reward our volunteers.
4. provide educational opportunities for CSB/SJU students, pre-college students, and the Saint John's community.
5. host annually a Community Tapping Day and Maple Syrup Festivals

**updated:** May 2012

### **Appendix 3: A Blessing – by Walter Kieffer, O.S.B.**

Oh, God of all goodness.

In the beginning you created the earth and divided it between the lands and the waters.

On the lands you created all kinds of vegetation; plants and trees of all kinds, and commanded them to cover the earth, providing both shelter and food for all.

Of the multitude of trees you have given us in this forest, you gave us the sugar maple to provide your gift of sweet sap from the healthy trees, and fuel for the cooking from the old and culled trees.

Today, following the rich traditions of our native brothers and sisters, we ask your blessing on this spring ritual of sapping.

May all the tap holes be clean and of a correct depth.

Help us to tap the spiles correctly – hard enough to seal the spile and hold the bag, but without damaging the tree, splitting the wood and losing the sap.

We ask your blessing on this season’s collecting, boiling, jugging, cleanup and wood restocking.

May you reward our labors with a fruitful harvest.

Lord, we ask your blessing on all nature.

Protect the woods and waters of our lands for generations to come.

Bless all who come out to work, observe, and visit.

May we be ever mindful of all gifts you provide for us.

We make this prayer as always through Christ our Lord, and in the power of your Holy Spirit. Amen.





# Appendix 4: Saint John's Sugar Bush Map

Sugar Bush Map - Saint John's Maple Syrup (2013)

