

# The Economic Impact of Snowplay Tourism on Coconino County

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# Executive Summary

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This research focuses on the characteristics of snowplay tourists in the Flagstaff area, their snowplay experiences and attitudes, and the economic impact of snowplay tourism activities on Coconino County in the 2022-2023 snow season. Snowplay tourism refers to people from outside of the Flagstaff area coming to play in the snow. In this study, we only included the free snowplay activities, such as sledding and building snowmen, and did not include fee-based activities such as skiing and snowboarding at the Snow Bowl, or tubing at the Flagstaff snow park. Snowplay, although is free, contributes to the local economy through visitors' spending on accommodations, food and beverage, retail, and other recreational activities.

A total of 201 surveys were conducted at snowplay locations in the Flagstaff area. The findings demonstrate that there were an estimated **167 thousand** people that engaged in snowplay during the 2022-23 snow season. There is an economic impact of **\$19.7 million** on the local economy, and **183 full time equivalent (FTE)** jobs were supported because of snowplay. Snowplay tourism generated **\$181.8 thousand** tax revenue for Coconino County. The study also finds that the majority of snowplay visitors came primarily for snowplay, are from out-of-town, have an average party size of five, and are generally satisfied with their snowplay experience. Other findings for survey respondents include the following:

- Thorpe Park, Buffalo Park and Fort Tuthill were the most popular locations for snowplay.
- 86% were not from the Flagstaff area.
- The most prevalent household income levels were \$25,000 - \$49,000 (19.4%) and \$50,000 - \$74,000 (15.4%).
- 70% were employed full time.
- 41% heard of snowplay from family and friends and 17% just know about it.
- 5 (Highest satisfaction) was the most popular response to the following categories:
  - Locating and signage to snowplay areas (47%).
  - Area road conditions (45%).
  - Traffic conditions getting to areas (51%).
  - Parking availability (37%); 10% ranked as a "1" (Lowest satisfaction).
  - Conditions at snowplay areas (53%).
  - Overall current snowplay experience (64%).

- 76% listed snowplay as the primary reason for their visit.
  - Tourism attractions and other snow related activities were other prevalent reasons.
- 23% said this was their first visit to Flagstaff including snowplay.
- 49% come to Flagstaff once or twice during the winter season for snowplay.
- 48.6% stayed overnight.
  - 28% stayed one night, 13% stayed two or more nights.
  - For snowplay visitors who stay overnight, the average stay is 1.63 nights.
- 34% stayed in a hotel/motel.
- Other sites or attractions that snowplay tourists planned to visit include:
  - Arizona Snowbowl (32.8%).
  - Downtown Flagstaff (26.9%).
  - Fort Tuthill Snowpark (9.5%).
  - Grand Canyon National Park (8.5%).
- Average expenditures per party for their entire trip were: Lodging (\$153 per night), Groceries (\$162), Restaurants (\$120), Gasoline (\$90), Retail (\$76), Transportation (\$45), Recreation (\$43).







# Methods

This report used a survey-based methodology to collect data in terms of visitor profile, expenditure, and sentiment. The survey was in paper form, in both English and Spanish, and was conducted across the various snowplay sites in the Flagstaff area. EPI researchers and graduate assistants had braved the cold and administered the survey by talking to individual snowplayers. A total of 201 valid surveys (including 188 in English and 13 in Spanish) were collected on weekends and holidays, during the course of the snow season, beginning on December 17th, 2022, and ending on March 5, 2023.

The survey contained 29 questions, and was structured to collect general group demographic information, information about their snowplay choices, attitudes towards various aspects of their snowplay experience, and their costs for various categories in order to determine economic impacts. Respondents who were from the Flagstaff area were excluded from the cost estimates and tourist attitude sections of the survey. A blank version of the survey can be found in the appendix.

Table 1 shows the locations where the survey was collected. The most common snowplay locations for respondents were Thorpe Park, Buffalo Park, and Fort Tuthill.

To estimate the total number of snowplay visitors, parking counts for various snowplay locations was tallied for various times on weekend/holiday days, which was used alongside average group size statistics determined from the survey and the



number of weekend/holiday days in the 2022-2023 snow season to estimate the total number of snowplay visitors to various locations.

An economic impact analysis was performed using IMPLAN. IMPLAN is a platform that combines a set of extensive databases, economic factors, multipliers, and demographic statistics with a highly refined, customizable modeling system. The foundation upon which economic impact analyses are built is the input-output (I-O) model, which examines the inter-industry relationships within an economy, and captures all monetary market transactions between industries in a given period of time.

By using the spending data of one sector, IMPLAN estimates the total economic output due to that spending on the local economy, which includes the direct (the direct injections of new money into the community), indirect (the economic effects stemming from business-to-business purchases in the supply chain), and induced economic impact (the economic effects created when local business owners, suppliers, and employees spend the additional income that they earned as a result of the direct and indirect impacts).

*Table 1. Location Where Snowplay Survey was Collected*

Locations	Frequency	Percent
Thorpe Park	40	19.9
Buffalo Park	39	19.4
Fort Tuthill County Park	34	16.92
Humphreys Peak View Parking Area Hwy 180	27	13.43
Foxglenn Park	18	8.96
Other*	18	8.96
Intersection of Lone Tree Rd and JW Powell Blvd	14	6.97
West Slope of NAU on Milton Rd	7	3.48
Walker Lake Winter Parking Area Hwy 180	2	1
No Response	2	1

Source: all data in Table 1 through Table 32 are from the survey results.

\* Other places in this study include official parking along highway 180 north or Fort Valley and in the continental club area.



# Visitor Profile

This section delineates the demographic profile of the sample of the snowplay tourists. Table 2 displays the respondents' genders, with about 54% of respondents being male and 44% being female.

*Table 2. Market Area Demographics*

Choice	Frequency	Percent
Male	108	53.73
Female	88	43.78
Prefer Not to Say	2	1
Non-binary/Third Gender	0	0
No Response	2	1
Multiple	1	0.5

The survey revealed that about 86% of respondents were not from the Flagstaff area, including places like Williams, Parks, and Winslow – see Table 3.

*Table 3. Are you from the Flagstaff area?*

Choice	Frequency	Percent
No	173	86.07
Yes	23	11.44
Second Home	0	0
No Response	5	2.49

Additionally, most of the respondents reported that their groups included either family and friends (45%) or family only (40%) – see Table 4.

*Table 4. Group Makeup*

Choice	Frequency	Percent
Family & Friends	90	44.78
Family Only	81	40.3
Friends Only	12	5.97
Visiting Alone	2	1
Organized Group	1	0.5
Other	1	0.5
People I Work With	0	0
No Response	14	6.97

The average size of snowplay groups was 5.5 people, comprised of 3.02 adults and 2.52 children.

Table 5 breaks down respondent ages, where more than 60 percent of the sample is made up of people 18-39 years old.

*Table 5. Age*

Choice	Frequency	Percent
18-29 years	61	30.35
30-39 years	61	30.35
40-49 years	47	23.38
50-59 years	18	8.96
60-69 years	4	1.99
Refused	1	0.5
70-79 years	0	0
80 years and more	0	0
No Response	12	5.97

In terms of the annual household income of snowplay tourists, the most prevalent household incomes were between \$25,000 and \$75,000. The average household income of snowplay tourists was \$68,920, which is below the general average for Flagstaff visitors of \$100,543 in the 2017-18 fiscal year in the Flagstaff Visitor Study (Economic Policy Institute, 2018). This implies snowplay is a more affordable tourism activity. See Table 6.

*Table 6. Annual Household Income*

Choice	Frequency	Percent
\$25000 - \$49999	39	19.4
\$50000 - \$74999	31	15.42
Refused	26	12.94
\$75000 - \$99999	24	11.94
\$100000 - \$124999	18	8.96
Under \$25000	17	8.46
Over \$175000	14	6.97
\$125000 - \$149999	8	3.98
\$150000 - \$174999	6	2.99
No Response	18	8.96

Table 7 and Table 8 show where the snowplay tourists are from. Nearly 82% of the respondents are in state travelers. Within Arizona, Maricopa County is the dominant place of origin for the snowplay tourists, contributes more than 82% of the respondents.



*Table 7. State of Residence*

State of Residence	Frequency	Percent
Arizona	163	81.91
California	2	1.01
Colorado	1	0.50
Montana	1	0.50
Texas	1	0.50
Washington D.C.	1	0.50
No Response	30	15.08

*Table 8. County of Residence in Arizona*

County of Residence in Arizona	Frequency	Percent
Maricopa County, Arizona	134	82.21
Pinal County, Arizona	10	6.13
Pima County, Arizona	5	3.07
Yuma County, Arizona	4	2.45
Cochise County, Arizona	3	1.84
Coconino County, Arizona	2	1.23
Yavapai County, Arizona	2	1.23
Apache County, Arizona	1	0.61
Greenlee County, Arizona	1	0.61
La Paz County, Arizona	1	0.61

Snowplay visitors were overwhelmingly full-time employees - see Table 9.

*Table 9. Employment*

Choice	Frequency	Percent
Employed Full Time	141	70.15
Employed Part Time	20	9.95
None of These	10	4.98
Homemaker	7	3.48
Retired	4	1.99
Not Currently Employed	4	1.99
Military	3	1.49
No Response	14	6.97

# Visitor Experience

This section reveals the snowplay tourists' rating and perception on various aspect of their snowplay experience in the Flagstaff area.

The top sources from where people found out about Flagstaff's snowplay locations are family and friends, or just knew about it - see Table 10.

*Table 10. Where did you hear about or get information on Flagstaff's snowplay areas?*

Choice	Frequency	Percent
Family & Friends	84	41.79
I just know about it.	35	17.41
Other	30	14.93
Other Website/Social Media	27	13.43
Newspaper/Magazine	12	5.97
Discover Flagstaff Website	4	1.99
Radio/TV	3	1.49
Flagstaff Visitor Center	3	1.49
Coconino County Website	2	1
Travel Agent	1	0.5
No Response	17	8.46

Tables 11-16 represent questions where participants were asked to rate various aspects of their snowplay experience on a scale from 1 to 5, where 1 is the lowest satisfaction, and 5 is the highest satisfaction. Overall, satisfaction is high for all categories, with respondents rating their current snowplay experience the highest, and parking availability the lowest of all 6 categories. Table 17 shows the overall score for each of the aspects.

*Table 11. Locating and Signage to Snowplay Areas*

Choice	Frequency	Percent
5	95	47.26
4	42	20.9
3	27	13.43
2	16	7.96
1	7	3.48
No Response	14	6.97

*Table 12. Area Road Conditions*

Choice	Frequency	Percent
5	91	45.27
4	41	20.4
3	28	13.93
2	16	7.96
1	6	2.99
No Response	19	9.45



*Table 13. Traffic Conditions Getting to Areas*

Choice	Frequency	Percent
5	103	51.24
4	36	17.91
3	27	13.43
2	12	5.97
1	5	2.49
No Response	18	8.96

*Table 14. Parking Availability*

Choice	Frequency	Percent
5	75	37.31
4	31	15.42
3	30	14.93
2	23	11.44
1	22	10.95
No Response	20	9.95

*Table 15. Conditions at Snowplay Areas*

Choice	Frequency	Percent
5	108	53.73
4	42	20.9
3	24	11.94
2	5	2.49
1	3	1.49
No Response	19	9.45

*Table 16. Your Current Snowplay Experience*

Choice	Frequency	Percent
5	129	64.18
4	34	16.92
3	16	7.96
2	3	1.49
1	1	0.5
No Response	18	8.96

*Table 17. Score on Various Aspects of Snowplay Experience*

Aspects to Snowplay Experience	Score
Locating and Signage to Snowplay Areas	4.08
Area Road Conditions	4.07
Traffic Conditions Getting to the Area	4.20
Parking Availability	3.63
Conditions at Snowplay Areas	4.36
Your Current Snowplay Experience	4.57

Respondents mostly stated that their primary reason for their visit was snowplay. See Table 18.

*Table 18. Is snowplay the primary reason for your visit?*

Choice	Frequency	Percent
Yes	154	76.62
No	27	13.43
No Response	20	9.95

The most common other reasons for visiting included other tourist attractions, skiing and snowboarding, and visiting family and friends. See Table 19.

*Table 19. If not, what is the primary reason?*

Choice	Frequency	Percent
Visiting other tourism attractions in Flagstaff	18	8.96
Other snow related activities e.g. skiing/snowboarding	16	7.96
Visiting family/friends	15	7.46
Passing by to other destinations	9	4.48
Business purposes	3	1.49
No Response	146	72.64
Invalid	1	0.5

For most respondents, this trip was not their first visit to Flagstaff that included snowplay, indicating repeated interest. See Table 20.

*Table 20. Is this your first visit to Flagstaff that includes snowplay?*

Choice	Frequency	Percent
No	134	66.67
Yes	48	23.88
No Response	19	9.45

For respondents that came multiple times, around half state that they usually came once or twice each snow season. See Table 21.

*Table 21. If not, how many times do you typically come to Flagstaff for snowplay?*

Choice	Frequency	Percent
Once or Twice	100	49.75
Three to Five Times	34	16.92
More than Five Times	15	7.46
No Response	52	25.87



# Visitor Spending

Table 22 shows whether respondents were coming to Flagstaff as a day trip or overnight. The results were mostly split down the middle. If we only look at the respondents who answered this question, there is 51.4% of the visitors that are day trip only, and 48.6% that are overnight visitors.

*Table 22. Day trip or overnight?*

Choice	Frequency	Percent
Day Trip Only	89	44.28
Overnight Trip	84	41.79
No Response	28	13.93

Of those staying overnight, most respondents stay one night or two nights - see Table 23. For snowplay visitors who stay overnight, the average stay is 1.63 nights.

*Table 23. How many nights are you staying in Flagstaff?*

Choice	Frequency	Percent
1 night	57	28.36
2 nights	46	22.89
3 nights	9	4.48
8 nights or more	1	0.5
4 nights	0	0
5 nights	0	0
6 nights	0	0
7 nights	0	0
No Response	88	43.78

For those staying overnight, the dominant lodging type was staying in a hotel or motel, with AirBnBs and Vrbo's being the second frequently chosen option - see Table 24.

*Table 24. Overnight Lodging Type*

Choice	Frequency	Percent
Hotel/Motel	70	34.83
AirBnB/Vrbo	28	13.93
Home of Friends/Family	12	5.97
Hostel	2	1
Campground/RV Park	2	1
No Response	90	44.78

When asked the average nightly rate for their lodging, the most common response was between \$150 and \$200, with an average of \$153 a night overall. See Table 25.

*Table 25. Average Nightly Room Rate of Lodging*

Choice	Frequency	Percent
\$151 - \$200	48	23.88
\$101 - \$150	23	11.44
No Cost	17	8.46
Over \$200	16	7.96
\$51 - \$100	12	5.97
Under \$50	5	2.49
No Response	79	39.3
Invalid	1	0.5

Tables 26-31 show the average spending of each respondent's party over their entire trip to Flagstaff. On average, respondents spent \$120 on restaurants over their entire trip, \$162 on groceries, \$90 on gas, \$45 on transportation, \$76 on retail products, and \$43 on recreational activities.

*Table 26. Restaurant and Bar Spending*

Choice	Frequency	Percent
\$51 - \$100	51	25.37
\$101 - \$150	41	20.4
\$151 - \$200	29	14.43
Over \$200	25	12.44
Under \$50	23	11.44
No Cost	10	4.98
No Response	22	10.95
\$51 - \$100	46	22.89
Under \$50	45	22.39
No Cost	32	15.92
Over \$200	19	9.45
\$101 - \$150	17	8.46
\$151 - \$200	14	6.97
No Response	28	13.93
<b>Average Spending</b>		<b>\$120</b>

*Table 27. Groceries Spending*

Choice	Frequency	Percent
\$51 - \$100	46	22.89
Under \$50	45	22.39
No Cost	32	15.92
Over \$200	19	9.45
\$101 - \$150	17	8.46
\$151 - \$200	14	6.97
No Response	28	13.93
<b>Average Spending</b>		<b>\$162</b>

*Table 28. Gasoline Spending*

Choice	Frequency	Percent
\$51 - \$100	93	46.27
\$101 - \$150	36	17.91
Under \$50	21	10.45
\$151 - \$200	17	8.46
Over \$200	7	3.48
No Cost	5	2.49
I Drive an EV	0	0
No Response	22	10.95
<b>Average Spending</b>		<b>\$90</b>



*Table 29. Transportation Spending  
(Including public transit/parking)*

Choice	Frequency	Percent
No Cost	94	46.77
Under \$50	48	23.88
\$51 - \$100	15	7.46
\$101 - \$150	6	2.99
\$151 - \$200	4	1.99
Over \$200	3	1.49
No Response	31	15.42
<b>Average Spending</b>		<b>\$45</b>

*Table 30. Retail Spending*

Choice	Frequency	Percent
Under \$50	51	25.37
No Cost	44	21.89
\$51 - \$100	36	17.91
Over \$200	18	8.96
\$101 - \$150	14	6.97
\$151 - \$200	14	6.97
No Response	24	11.94
<b>Average Spending</b>		<b>\$76</b>

*Table 31. Recreation, Entrance,  
and Permit Spending*

Choice	Frequency	Percent
No Cost	83	41.29
Under \$50	58	28.86
\$51 - \$100	20	9.95
\$101 - \$150	5	2.49
\$151 - \$200	3	1.49
Over \$200	3	1.49
No Response	29	14.43
<b>Average Spending</b>		<b>\$43</b>

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Snowplay tourists for the most part planned on coming to Flagstaff for more than just general snowplay. The most common things that snowplay tourists were going to do other than general snowplay were visiting Arizona Snowbowl and downtown Flagstaff. See Table 32.

*Table 32. What other sites, attractions, or events do you plan to see?*

Choice	Frequency	Percent
Arizona Snowbowl	66	32.84
Downtown Flagstaff	54	26.87
Don't Know	41	20.4
Other	20	9.95
Snow Park at Fort Tuthill	19	9.45
Grand Canyon National Park	17	8.46
Lowell Observatory	15	7.46
Arizona Nordic Village	13	6.47
Museum of Northern Arizona	13	6.47
Northern Arizona University	12	5.97
Coconino Center for the Arts	6	2.99
Sunset Crater Volcano NM	6	2.99
Walnut Canyon NM	6	2.99
Riordan Mansion State Historic Park	2	1
Wupatki NM	2	1
No Response	31	15.42



# Economic Impact Analysis

## Snowplay's Direct, Indirect, Induced Economic Effect

The economic impact of snowplay is calculated for the 2022-2023 snow season by estimating the direct, indirect, and induced effect from visitor spending in the Flagstaff area. The visitor spending in various categories immediately increase local sales activity, benefiting the region's hospitality industries, and generate increases in local employment and income level, which is the direct effect.

When the level of direct expenditure increases in a region, these dollars are spent and re-spent in the local economy. This generates a magnified impact on the region called the "multiplier." The increase in demand for local inputs generate a multiplier effect, or ripple effect, which is the indirect effect. It occurs when local businesses gear up to replace and expand the level of those inputs. To meet these demands, the firms must also increase their purchase of inputs from other producers, some of whom may be local. As a result, those producers must also increase their purchase of inputs, and hiring of labor to produce the desired goods and services.

The chain of events does not stop here. Increase in employment resulting from higher direct and indirect spending will increase the incomes of local households. These households, in turn, will spend a portion of their new incomes in the local economy. This spending stimulates even more demand for output and creates additional employment opportunities in the local region. This tertiary increase in economic activity is the induced effect, and is a reflection of the changes that occur due to higher household income in the region.

## Snowplay Visitation Estimates

To estimate the total economic impact of snowplay, we first need to estimate the total visitation from the general snowplay areas. Then, utilizing the average spending data from the survey conducted at various locations, an economic impact analysis can be performed utilizing IMPLAN.

In order to estimate the total number of general snowplay visitors, this study investigates the use of parking at various snowplay locations. Each location has a certain amount of parking, shown in Table 33. During the winter season, those parking locations have reduced capacity due to unplowed snow.

*Table 33. Parking at Various Snowplay Sites*

Location	Full Parking Capacity	Degraded Parking Capacity Due to Unplowed Snow
Thorpe Park	50	30
Buffalo Park	40	20
Foxglenn Park	80	80
Fort Tuthill County Park	200	150
Humphreys Peak View Parking Area (Hwy 180)	40	25
McPherson Park	60	60
Hwy 180 & Fire Road 794	25	20
Intersection of Lone Tree Road and J W Powell Boulevard	10	5
NAU Slope on Milton	75	70
<b>Total</b>	<b>580</b>	<b>460</b>

Source: Google Earth, and EPI research team observations.

This calculation uses the degraded parking capacity total of 460 for calculations. The calculation is conservative because this list is to the best of the researchers' knowledge, including both designated and undesignated snowplay areas, but it is not exhaustive. There are other snowplay areas that people may discover when they drive in the area, some are off the road and have no parking facility around it.

This study makes the assumption that each parking lot was filled twice per holiday and weekend day with unique groups, once in the morning and once in the afternoon, meaning a total of 920 groups used these areas for general snowplay each of these days. Based on surveys data, the average size of snowplay groups was 5.5 people (3.02 adults, 2.52 children). This information along with the number of holiday and weekend days was used for the total visitation calculation below.

$$33 \text{ days} * 920 \text{ groups} * 5.5 \text{ people per group} = 166,980 \text{ general snowplay visitors (2022-23)}$$

This number is well above the number of visitors in the fee-based sites. For example, Flagstaff Snow Park indicated that for the 2022-23 season, they received a total of 69,125 visitors. There might be some overlap with the fee-based visitors.

## Spending per Group

To calculate the economic impact of snowplay, visitor spending habits are required. These spending habits are determined from the survey conducted in snowplay areas. By category, average spending per travel party for their entire trip is broken down as follows:

- Lodging - \$153 per night, average stay 1.63 nights for overnight visitors, which is 48.6% of the total visitors, or 447 groups
- Groceries - \$162
- Restaurants - \$120
- Gasoline - \$90
- Retail - \$76
- Transportation - \$45
- Recreation - \$43

A more detailed overview of responses to spending by category was exhibited in Tables 25 through Table 31 in Section 5.



## Economic Impact of Snowplay

Using this data, the IMPLAN input-output economic impact modeling software was used to calculate the economic impact of snowplay for the 2022-2023 season.

The total economic output of snowplay is calculated at **\$19.7 million** for the 2022-23 snow season. An estimated **183 jobs** are supported through snowplay tourism. Snowplay activities increased labor income in Coconino County by **\$6.7 million**, and created **\$11.3 million** in value added, which can be interpreted as an additional \$11.3 million to the region's Gross Regional Product or Gross Domestic Product. i.e., GDP – see Table 34 for a breakdown of the direct, indirect, and induced number for those indicators. Taking the economic output number as an example, \$13 million of the \$19.7 million total impact of snowplay is direct spending from snowplay tourists, with \$3.4 million of output through the supply chain and \$3.3 million of output from employees along the supply chain spending their salaries supported by snowplay.

*Table 34. Economic Impact of Snowplay by Impact Type*

Impact	Employment	Labor Income	Value Added	Output
Direct	144	\$4,718,565	\$7,801,423	\$12,972,530
Indirect	20	\$970,718	\$1,573,706	\$3,456,796
Induced	20	\$998,207	\$1,953,571	\$3,309,934
<b>Total</b>	<b>183</b>	<b>\$6,687,491</b>	<b>\$11,328,700</b>	<b>\$19,739,260</b>

Source: IMPLAN Model, 2022 Data, using inputs provided by EPI, and IMPLAN Group LLC.

Table 35 shows the fiscal impact attributable to snowplay for all levels of government. The total tax revenue tops \$3.1 million. Focusing on the region, Coconino County draws \$181,835 in tax revenue from snowplay and all of the industries and lives it supports, with \$139,201 coming directly from snowplay visitor spending. Additionally, special districts such as fire and school districts draw \$1.5 million in snowplay tax revenue, \$1.1 million from direct spending. The State of Arizona draws \$845,539 from the snowplay activity in the Flagstaff area.

*Table 35. Tax Results of Snowplay by Government Level*

Impact	City	Special Districts	County	State	Federal	Total
Direct	\$204,897	\$189,656	\$139,201	\$636,771	\$1,125,723	<b>\$2,296,248</b>
Indirect	\$24,254	\$22,597	\$16,488	\$84,511	\$220,707	<b>\$368,558</b>
Induced	\$38,509	\$35,658	\$26,146	\$124,257	\$245,626	<b>\$470,197</b>
<b>Total</b>	<b>\$267,661</b>	<b>\$247,912</b>	<b>\$181,835</b>	<b>\$845,539</b>	<b>\$1,592,056</b>	<b>\$3,135,003</b>

Source: IMPLAN Model, 2022 Data, using inputs provided by EPI, and IMPLAN Group LLC.

Table 36 shows the top ten impacted industries. If looking at the ranking by the economic impact output, the most supported industries by snowplay tourism are unsurprisingly restaurants, hotels and motels, and retail stores. The "industry total output" column shows the total value of those industries in Coconino County. If we look at the percentage of growth caused by snowplay, the industry that was affected the most was transit and ground passenger transportation, with an estimated growth percentage of 7.66% attributable to snowplay.

*Table 36. Economic Impact of Snowplay by Industry*

Top Impacted Industry	Industry Total Output	Impact Output	Growth Percentage
Restaurants	\$401,865,386	\$3,812,636	.95%
Hotels and Motels	\$361,086,192	\$3,679,934	1.02%
Retail - Food and Beverage Stores	\$130,429,789	\$1,708,493	1.31%
Transit and Ground Passenger Transportation	\$17,939,956	\$1,374,246	7.66%
Museums, Historical Sites, Zoos, and Parks	\$37,159,987	\$1,308,169	3.52%
Other Real Estate	\$715,977,456	\$871,530	.12%
Retail - General Merchandise Stores	\$132,209,360	\$798,726	.60%
Retail - Gasoline Stores	\$114,857,399	\$664,232	.58%
Owner-occupied Dwellings	\$829,248,399	\$527,649	.06%
Hospitals	\$813,480,379	\$305,823	.04%

Source: IMPLAN Model, 2022 Data, using inputs provided by EPI, and IMPLAN Group LLC.

## Economic Impact Comparison with Other Activities

To better understand the scale of economic impact the free snowplay tourism brings (except it's not free - people spend in the region and contribute to the local economy), the economic impacts of other relevant activities, i.e., the fee-based Flagstaff Snow Park and Snowbowl are provided as a comparison. The numbers cited here are from proprietary reports EPI has done in the past. The geographical scopes are all Flagstaff/Coconino County, and the dollar amounts have been converted to 2023 equivalent.

*Table 37. Economic Impact Comparison of Snowplay Tourism Activities/Facilities*

	Number of Visitors	Total Economic Impact (in 2023 dollar)	Employment Supported
Snowplay (Free)	166,980	\$19,739,260	183
Snowbowl	301,500	\$58,774,660	558.8
Snow Park	50,935	\$5,983,943	63.8

Source: The numbers for Snowbowl and Snow Park are from respective studies by EPI (proprietary); the numbers for Snowplay are based on this study.

One thing to note, there are overlaps of the visitors that are engaged in the three activities/places. Thus, the numbers in Table 37 are purely for comparison, but should not be added up.

# Conclusion and Discussion

The results of this report both help to quantify the economic impact of snowplay on the region and to build an idea of who snowplay visitors are and their attitudes. The snowplay industry had a total economic impact of \$19.7 million in the 2022-2023 snow season, supporting 183 jobs and especially supporting the lodging, restaurant, retail, and transportation industries. Overall, snowplay tourists are from out of town, within the state, and come to Flagstaff primarily for the snow. The participants' household income is below the general average for Flagstaff visitors. Snowplay is a relatively affordable tourism activity, and it provides equitable winter recreation opportunity for people throughout the state. Tourists are generally satisfied with their snowplay experiences, although parking lags behind other snowplay categories in satisfaction.

As one of the very few places in the state that provide snowplay opportunities, the greater Flagstaff region needs careful planning to provide a safe and pleasant environment for our guests. This report, as an economic impact study, has its limitations - it only shows one portion of how this winter activity contribute to our economy. A future study which involves the other aspects of the externalities would be necessary to show a full picture of the snowplay tourism, especially the true cost of this activity, e.g., increased traffic, pollution, littering, the challenges created by short term rental to local housing needs, etc.

In the short run, an interactive map on the snowplay site is advised to add to the snowplay information webpage of the City of Flagstaff and Coconino County to better inform snowplay participants.

Parking is the least satisfactory aspect in the overall snowplay experience. The limited parking capacity, lessened by piled snow or unplowed parking lot, making it a challenge for safe snowplay, but it also presents an immediate opportunity for the City and the County to improve the visitor experience.

Visitor safety is essential. For visitors from other places of the state who are not well versed in driving in the snow, and sometimes have the excitement exceeding the caution to traffic safety, safety information needs to be disseminated, and education programs need to be designed and implemented in a more effective way, including better signage that are consistent, informatic, and be able to draw attention.





# References

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# Appendices

## Appendix 1. Flagstaff Snowplay Visitor Survey 2023

Coconino County and the City of Flagstaff have partnered with NAU to conduct a snowplay visitor survey. Your answers are totally anonymous and will help us understand your visit to Flagstaff and how we can improve services to you. Thank you for your participation.

1. Today's Date: \_\_\_ / \_\_\_ / \_\_\_\_\_

2. Your snowplay location:

- Thorpe Park
- Buffalo Park
- Foxglenn Park
- Fort Tuthill County Park
- Humphreys Peak View Parking Area (Hwy 180)
- Walker Lake Winter Parking Area (Hwy 180)
- West Slope of NAU on Milton Rd
- Intersection of Lone Tree Rd and JW Powell Blvd
- Other

3. Gender of Participant?

- Male
- Female
- Non-binary/Third Gender
- Prefer Not to Say

4. Are you from the Flagstaff area (within 50 miles of Flagstaff, including Parks, Williams, & Winslow)?

- Yes (If yes: Thank you for taking the survey)
- No (If from outside of Flagstaff Area: **Continue**)
- I own a second home in the Flagstaff area (**Continue**)

5. Including yourself, how many adults, 18 years and older, and children are in your party today?

# of Adults \_\_\_ # of Children \_\_\_

6. Are you with family, friends, people you work with or an organized group?

- Family & Friends
- Friends Only
- Family Only
- Visiting Alone
- People I Work With
- Organized Groups (club, church, tour group, etc.)
- Other

7. What is your age?

- 18-29 years
- 30-39 years
- 40-49 years
- 50-59 years
- 60-69 years
- 70-79 years
- 80 years and more
- Refused

8. What is your annual household income before taxes?

- Under \$25,000
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$124,999
- \$125,000 - \$149,999
- \$150,000 - \$174,999
- Over \$175,000
- Refused

9. What is the ZIP code of your permanent residence?

\_\_\_\_\_

10. If not from the U.S., what is your country of origin?

\_\_\_\_\_

11. What is your profession (select all that apply)?

- Employed Part Time
- Employed Full Time
- Retired
- Military
- Not Currently Employed
- Homemaker
- None of These

12. Where did you hear about or get information on Flagstaff's snowplay areas? Select all that apply.

- Family & Friends
- Newspaper/Magazine
- Radio/TV
- Travel Agent
- Discover Flagstaff Website
- Coconino County Website
- Other Website/Social Media
- Flagstaff Visitor Center
- I just know about it
- Other

13. On a scale of 1 to 5 where 1 is low and 5 is high, please indicate your overall satisfaction with:

	1	2	3	4	5
Locating & Signage to Snowplay Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area Road Conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic Conditions Getting to Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking Availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conditions at Snowplay Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your Current Snowplay Experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Appendix 1. Flagstaff Snowplay Visitor Survey 2023

## 14. Is snowplay in Flagstaff the primary reason for this visit?

- Yes (Please continue to Question 16)
- No

## 15. If no, what is the primary reason?

- Visiting family/friends
- Business purposes
- Visiting other tourism attractions in Flagstaff area
- Passing by to other destinations
- Other snow related activities (skiing/snowboarding)

## 16. Is this your first visit to Flagstaff that includes snowplay?

- Yes (Please continue to Question 18)
- No

## 17. If no, how many times do you typically come to Flagstaff in the winter season for the snowplay?

- Once or Twice
- Three to Five Times
- More Than Five Times

## 18. How many times have you visited Flagstaff in the past 12 months? \_\_\_\_\_

## 19. How much time, in total, will you spend in Flagstaff on this trip?

- Day Trip Only (If Day Trip Only, how many hours will you be in Flagstaff on this trip? \_\_\_\_\_). Please continue to Question 23)
- Overnight Trip

## 20. How many nights are you staying in Flagstaff on this trip?

- 1 night
- 2 nights
- 3 nights
- 4 nights
- 5 nights
- 6 nights
- 7 nights
- 8 nights or more

## 21. What type of overnight lodging are you using on this trip?

- Hotel/Motel
- AirBnB/Vrbo
- Home of Friends/Family
- Hostel
- Campground/RV Park

## 22. What is the average nightly room rate of the lodging where you are staying in Flagstaff?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

In the Flagstaff Area, during this trip, for your travel party, how much are you spending on the following categories (please give an estimate for Questions 23 to 28)?

## 23. How much are you spending on Restaurant & Bar?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 24. How much are you spending on Groceries?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 25. How much are you spending on Gasoline?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 26. How much are you spending on other Transportation (include public transit & parking)?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 27. How much are you spending on Retail Spending (souvenir/gear/clothing/presents, etc.)?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 28. How much are you spending on Recreation/Entrance/Permit Fees?

- Under \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Over \$200
- No Cost (\$0)

## 29. While staying in Flagstaff, what other sites, attractions or events do you plan to see?

- Arizona Snowbowl
- Arizona Nordic Village (Flagstaff Nordic Center)
- Snow Park at Fort Tuthill
- Coconino Center for the Arts
- Museum of Northern Arizona
- Downtown Flagstaff
- Grand Canyon National Park
- Lowell Observatory
- Northern Arizona University
- Riordan Mansion State Historic Park
- Sunset Crater Volcano NM
- Walnut Canyon NM
- Wupatki NM
- Don't Know
- Other



## Appendix 2. Encuesta de Visitantes de Juegos de Nieve en Flagstaff Snowplay 2023

El condado de Coconino y la ciudad de Flagstaff se han asociado con NAU para realizar una encuesta de visitantes de juegos de nieve. Sus respuestas son totalmente anónimas y nos ayudarán a comprender su visita a Flagstaff y cómo podemos mejorar los servicios para usted. Gracias por su participación.

1. Fecha de hoy: \_\_\_ / \_\_\_ / \_\_\_\_\_

2. Su ubicación de juego de nieve:

- Thorpe Parque
- Buffalo Parque
- Foxglenn Parque
- FortTuthill County Park
- Humphreys Peak View- Area de Estacionamiento (Hwy 180)
- Walker Lake- Area de Estacionamiento De Invierno (Hwy 180)
- Intersección de Lone Tree Rd y JW Powell Blvd
- Otros

3. ¿Sexo del participante?

- Masculino
- Femenino
- No binario /Tercer Sexo
- Prefiero no Decir

4. ¿Es usted del área de Flagstaff (dentro de las 50 millas de Flagstaff, incluidos Parks, Williams y Winslow)?

- Sí (Si es así: gracias por responder la encuesta)
- No (Si es desde fuera del área de Flagstaff: **Continúe**)
- Tengo una segunda casa en el área de Flagstaff (**Continúe**)

5. ¿Incluyéndote a ti mismo, cuántos adultos, mayores de 18 años, y niños están en tu grupo hoy?

# de Adultos \_\_\_ # de Niños \_\_\_

6. ¿Estás con familiares, amigos, personas con las que trabajas o un grupo organizado?

- Familia y amigos
- Solo amigos
- Solo familia
- Visitando solo
- Personas con las que trabajo
- Grupo organizado (club, iglesia, grupo turístico, etc.)
- Otros

7. ¿Cuál es tu edad?

- 18-29 años
- 30-39 años
- 40-49 años
- 50-59 años
- 60-69 años
- 70-79 años
- 80 años y más
- Rechazado

8. ¿Cuál es su ingreso familiar anual antes de impuestos?

- Menos de \$25,000
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$124,999
- \$125,000 - \$149,999
- \$150,000 - \$174,999
- Más de \$175,000
- Rechazado

9. ¿Cuál es el código postal de su residencia permanente?

\_\_\_\_\_

10. Si no es de los Estados Unidos, ¿cuál es su país de origen? \_\_\_\_\_

11. ¿Cuál es su profesión (seleccione todas las que correspondan)?

- Empleado a tiempo parcial
- Empleado a tiempo completo
- Jubilado
- Militar
- No empleado/a actualmente
- Ama/o de casa
- Ninguno de estos

12. ¿Dónde se enteró o obtuvo información sobre las áreas de juego de nieve de Flagstaff? Seleccione todas las opciones que correspondan.

- Familia y amigos
- Periódico/revista
- Radio/TV
- Agente de Viajes
- Sitio web de Discover Flagstaff
- Sitio web del Condado de Coconino
- Otro sitio web/redes sociales
- Centro de visitantes de Flagstaff
- sólo lo se
- Otros

13. En una escala de 1 a 5 donde 1 es bajo y 5 es alto, indique su satisfacción general con:

	1	2	3	4	5
Localización y señalización de áreas de juego de nieve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condiciones de la carretera del área	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condiciones del tráfico para llegar a las áreas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disponibilidad de estacionamiento	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condiciones en las áreas de juego de nieve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tu experiencia actual de juego en la nieve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix 2. Encuesta de Visitantes de Juegos de Nieve en Flagstaff Snowplay 2023

### 14. Juegos de nieve en Flagstaff fue el motivo principal de esta visita?

- Sí (continúe con la pregunta 16)
- No

### 15. En caso que no, ¿cuál es la razón principal?

- Visitar a familiares/amigos
- Propósitos de negocios
- Visitar otras atracciones turísticas en el área de Flagstaff
- De paso a otros destinos
- Otras actividades relacionadas con la nieve (esquí/snowboard)

### 16. ¿Es esta tu primera visita a Flagstaff que incluye juegos de nieve?

- Sí (continúe con la pregunta 16)
- No

### 17. Si no, ¿Cuántas veces vienes normalmente a Flagstaff en la temporada de invierno para el juego de nieve?

- Una o dos veces
- De tres a cinco veces
- Más de cinco veces

### 18. ¿Cuántas veces has visitado Flagstaff en los últimos 12 meses? \_\_\_\_\_

### 19. ¿Cuánto tiempo, en total, pasarás en Flagstaff en este viaje?

- Solo viaje de un día (si solo viaje de un día, ¿cuántas horas estará en Flagstaff en este viaje? \_\_\_\_\_. Please continue to Question 23)
- Viaje nocturno

### 20. ¿Cuántas noches te alojas en Flagstaff en este viaje?

- 1 noche
- 2 noches
- 3 noches
- 4 noches
- 5 noches
- 6 noches
- 7 noches
- 8 noches o más

### 21. ¿Qué tipo de alojamiento durante la noche está utilizando en este viaje?

- Hotel/Motel
- AirBnB/Vrbo
- Hogar de amigos/familiares
- Hostal
- Camping/Parque de casa rodante

### 22. ¿Cuál es la tarifa promedio por noche del alojamiento donde se hospeda en Flagstaff?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

En el área de Flagstaff, durante este viaje, para su grupo de viaje, ¿cuánto está gastando en las siguientes categorías (por favor dé una estimación para las preguntas 23 a 28)?

### 23. ¿Cuánto gastas en Restaurante & Bar?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 24. ¿Cuánto estás gastando en Comestibles?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 25. ¿Cuánto estás gastando en Gasolina?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 26. ¿Cuánto está gastando en otro Transporte (incluye transporte público y estacionamiento)?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 27. ¿Cuánto está gastando en compras minoristas (sovenir / equipo / ropa / regalos, etc.)?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 28. ¿Cuánto está gastando en tarifas de recreación / entrada / permiso?

- Menos de \$50
- \$51 - \$100
- \$101 - \$150
- \$151 - \$200
- Más de \$200
- Sin costo (\$0)

### 29. Durante su estancia en Flagstaff, ¿qué otros sitios, atracciones o eventos planea ver?

- Arizona Snowbowl
- Arizona Nordic Village (Centro Nórdico de Flagstaff)
- Parque de nieve en Fort Tuthill
- Centro de las Artes en Coconino
- Museo del Norte de Arizona
- El Centro Flagstaff
- Parque Nacional del Gran Cañón
- Observatorio de Lowell
- Northern Arizona University
- Parque Histórico Estatal de Riordan Mansion
- Sunset Crater Volcano NM
- Walnut Canyon NM
- Wupatki NM
- No se
- Otros