



Standard Operating Procedure 2: Data Analysis and Reporting Version 1.0

Monitoring visitor use in Southwest Alaska Network



ON THE COVER

Visitors bear watching at Brooks Falls, Katmai National Park and Preserve
NPS

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Change History

Version #	Date of Revision	Revised By	Changes	Justification
1.0	08/31/2018	Shepherd	–	Original Version

This standard operating procedure (SOP) outlines methods for Commercial Use Authorization (CUA) visitor use data analysis and reporting. Visitor use data structures and data entry/validation workflow processes have been established by concessions working groups from Alaska park units, administrative offices, and the Inventory & Monitoring Program's Southwest Alaska Network (SWAN). This SOP describes the data analytics and data visualization methods needed to produce annual resource briefs that portray visitor use counts and activity patterns.

Introduction

This SOP describes the steps for summarizing data from CUA operator reports and producing annual resource briefs for Katmai National Park and Preserve (KATM) and Lake Clark National Park and Preserve (LACL). The goal is to have resource briefs finalized before the parks have their annual CUA meeting, typically in late April.

Producing the Annual Resource Brief

The Southwest Alaska Network will produce resource briefs annually for KATM and LACL. After the data have been entered into the database and the final review of the data completed by the park's CUA Manager, the data will be pulled from the database into an Excel file. The pivot and graphing tools in Microsoft Excel will be used to examine and graphically display the data.

Content of Resource Brief

Introduction

The resource brief introduction provides a short explanation of why SWAN and the parks are interested in visitor use data. The content will not change much from year to year.

Park Visitation (Analysis and Results)

The Park Visitation section discusses the summarized data with visitor use days as the metric (a visitor use day is the total number of people on a trip multiplied by the number of days at a location).

Data for resource briefs are pulled from the database with a predefined query or view (vw_VisitorUseDays_Primer) that partially prepares the data for analysis within the brief. The data pulled from the database are filtered to the park that the resource brief is being created for. The query sums the visitor user days, by park, account year, location (i.e. Visitor Use Monitoring Area), region

(a larger area in the park), activity, and month. The data output is used as a primer for all of the data figures used in the resource brief.

The data returned by the query are put into Microsoft Excel. The pivoting and graphing functions within Excel are used to summarize and display the data. A set of standard graphs are used to show visitation patterns:

- Visitor Use Days by Year for Select Locations (Katmai and Lake Clark)
- Visitor Use Days by Year and Month (Katmai and Lake Clark)
- Visitor Use Days by Year and Activity (Katmai and Lake Clark)
- Visitor Use Days by Month and Select Locations within a Year (Katmai).

Standard Graphs

Visitor Use Days by Year for Select Locations

Examining visitor use days by location and year are done in both Lake Clark and Katmai. Because of space considerations in the two-page brief, the locations are filtered to a subset of all possible visitor use monitoring areas, and typically include locations with the highest visitor use days (counts). As of 2017, all years in the data set are shown in the figures, but because of space limitations, ‘years’ will likewise need to be filtered in coming years. The locations are grouped depending on whether they’re located on the coast or the interior portion of the park (e.g. Lake Clark sees more visitor use days on the coast). The fields used in the pivot chart are: Legend = Account Year; Axis (Categories) = Locations (filtered by the field button); Values = Sum of User Days.

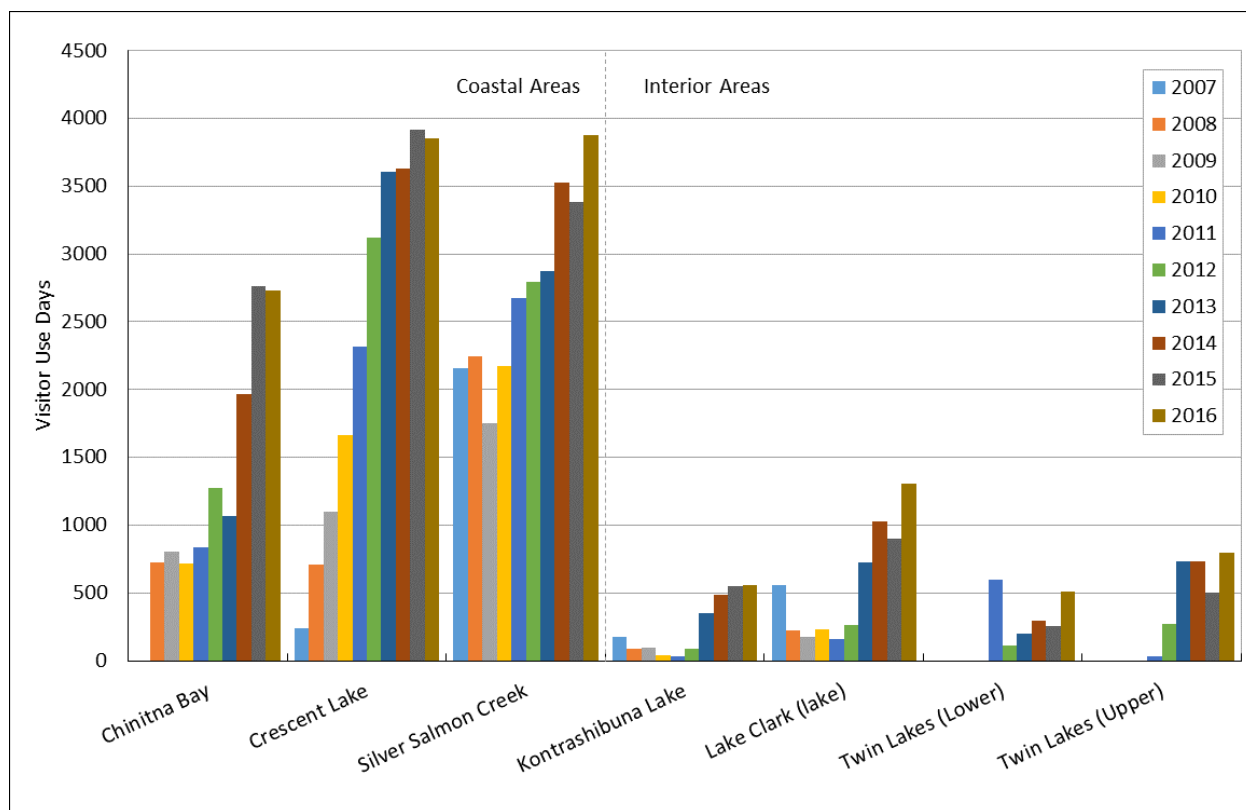


Figure 1. Example of a figure showing visitor use days by year for selected locations (from LACL's April 2017 Resource Brief).

Visitor Use Days by Year and Month

This graph looks at how visitor use days in a given month are changing across years within a park. By viewing this figure, one can also see how one month's activity compares to another month within the same year. In this example, July shows the greatest number of visitor use days compared to the other months (an exception being in 2009 when July and August had similar numbers). To generate the pivot chart, use the fields: Legend (Series) = Month; Axis (Categories) = Account Year; Values = Sum of User Days.

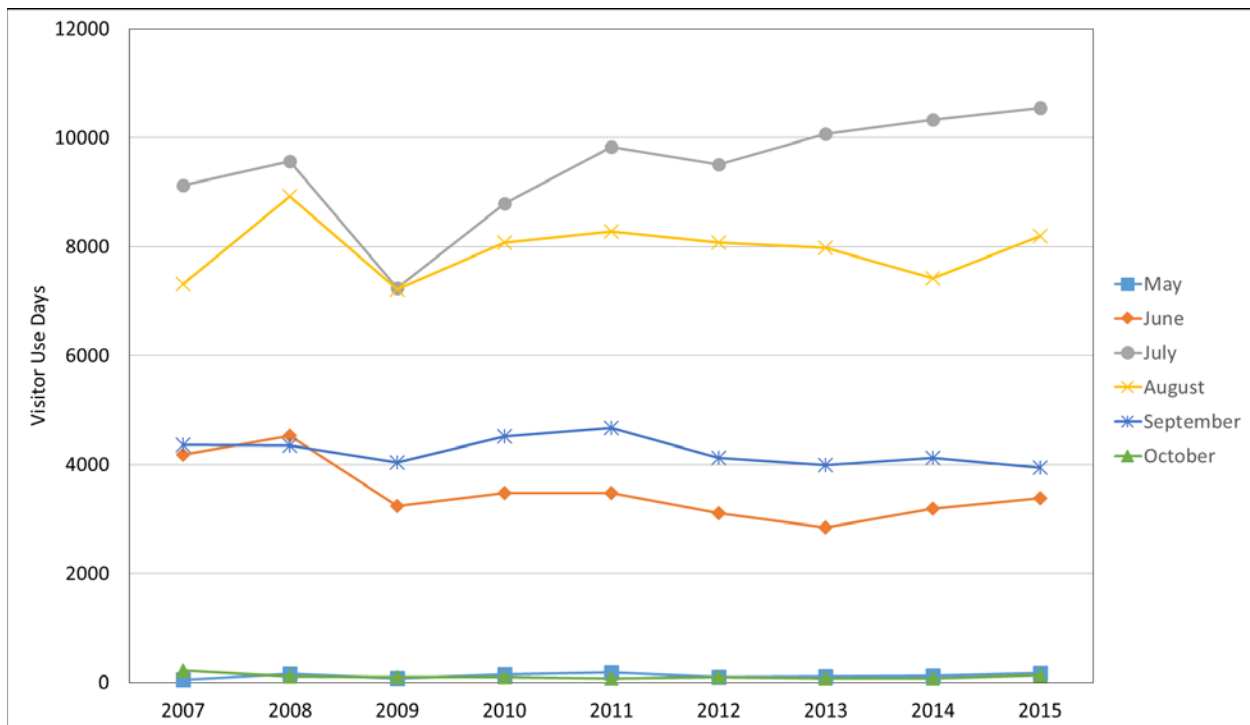


Figure 2. Example of a graph showing visitor use days by year and month (example from Katmai's April 2016 resource brief).

Visitor Use Days by Year and Activity

This graph shows visitor use days by year and activity, which is the primary activity the CUA operators indicated that the clients were taking part in. This figure can show if visitors' reason for coming to the park is changing. In this example, bear viewing has overtaken sport fishing as the reason people are visiting Lake Clark. To generate the pivot chart, use the fields: Legend (Series) = Activity; Axis (Categories) = Account Year; Values = Sum of User Days.

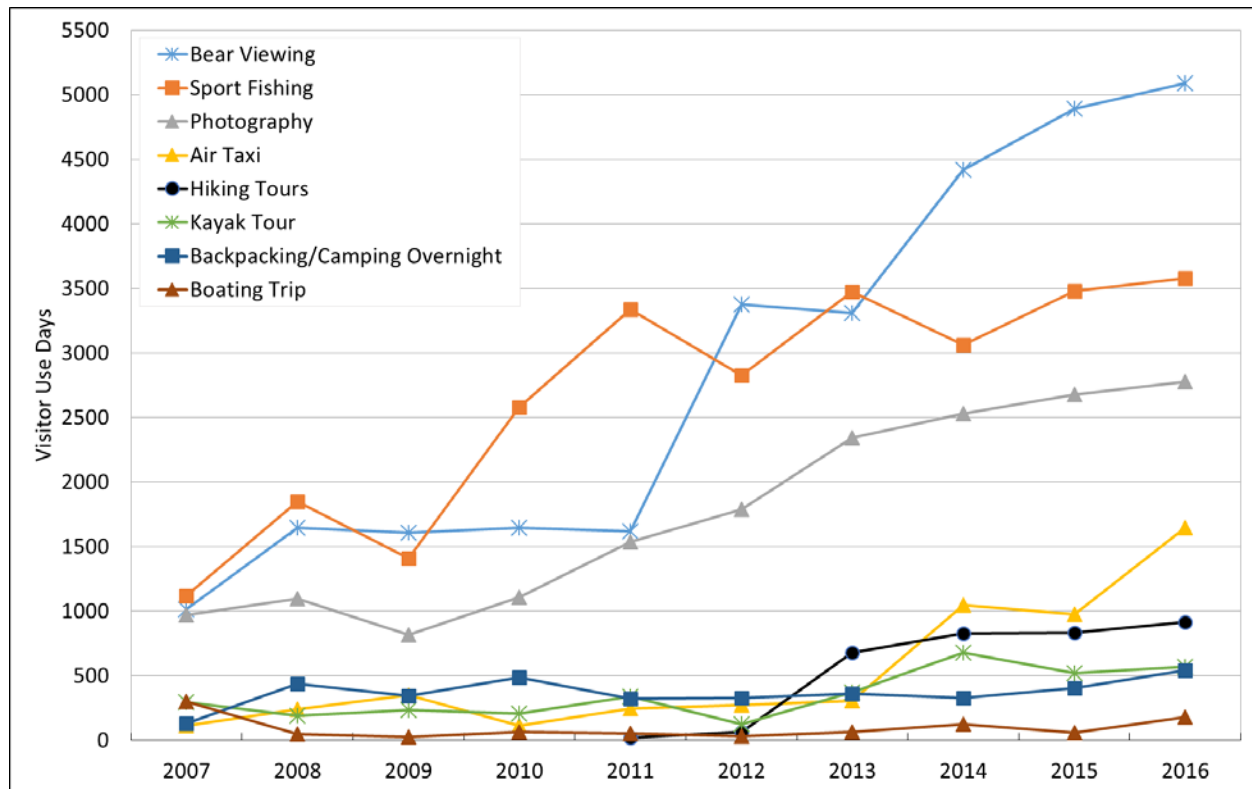


Figure 3. Example of a graph showing visitor use days by year and activity (example from Lake Clark's April 2017 resource brief).

Visitor Use Days by Month and Select Locations within a Year

This graph is generated for Katmai only, with swings in locations changing by month depending on where bears are present for viewing (Lake Clark does not show the same visitation swings between locations within a year). In Katmai, there is usually a shift in visitor use days between Brooks Camp in July and Moraine Drainage in August, as the CUA operators follow the best viewing locations for bears (see Figure 4). To generate the pivot chart, you use the fields: Filters = Account Year (set to most current year of data); Legend (Series) = Location; Axis (Categories) = Month; Values = Sum of User Days.

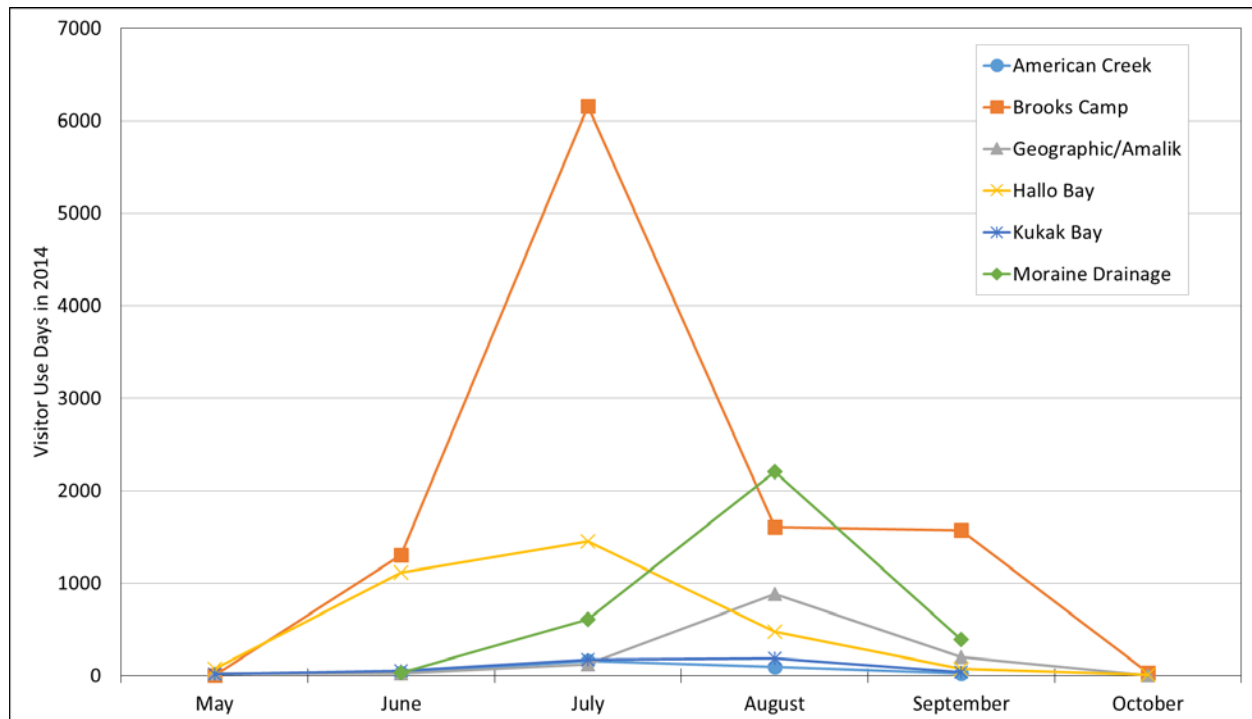


Figure 4. Example of the graph showing the Visitor Use Days by Month and Location within a Year (example is from the Katmai April 2015 brief showing data from the 2014 season).

Methods

The methods describe the source of the data (CUA Activity Reports submitted by commercial operators) and define what a visitor use day is. The section will not change much between years.

Publishing the Brief

When all of the graphs, text and any photographs to be part of the resource brief are ready, the Regional Science Communication Specialist will bring the items into an InDesign template to create the layout of the briefs. The InDesign file will be export to the PDF format for publishing and made available from the [IRMA Data Store](https://irma.nps.gov/DataStore/) (<https://irma.nps.gov/DataStore/>) and [SWAN's Reports and Publications web page](https://science.nature.nps.gov/im/units/swan/publications.cfm) (<https://science.nature.nps.gov/im/units/swan/publications.cfm>).

Literature

This standard operating procedure was written in support of the visitor use protocol.

Shepherd, T. and R. Frith. 2018. Monitoring visit use in the Southwest Alaska Network using Commercial Use Authorization (CUA) Reports. Natural Resource Report NPS/SWAN/NRR—2018/1693. National Park Service, Fort Collins, Colorado.

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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