

Brooks River Timelapse Photography Project 2004-2011



Natural Resource Program Center

Background

Brooks River, an important brown bear (*Ursus arctos*) feeding area in Katmai National Park, is a migratory route and spawning stream for salmon (*Oncorhynchus* spp.). It is also an area that has seen visitor use increase in the last 30 years as bear viewing has become popular. Viewing platforms on the North side of the river and other visitor facilities on the South side are connected by a floating bridge on the lower section of the river. Using timelapse photography, density levels of bears and people were documented, both up river and down river of the floating bridge. Two cameras, mounted on the viewing platform, began taking time-interval photographs before salmon arrived and continued until October. The activity levels of bears and people, in relation to the season and the time of day were also studied.



Downriver photographs taken in September 2004, 2007, 2010. The floating bridge was moved in August 2008 to reduce closure time.



Upriver photographs taken in July 2004, 2007, 2010.



Photo by Roy Wood

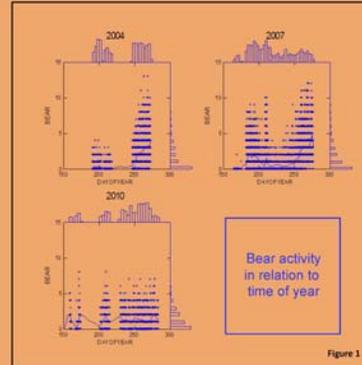


Figure 1

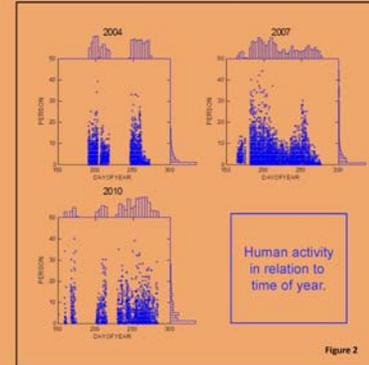


Figure 2



NPS Photo

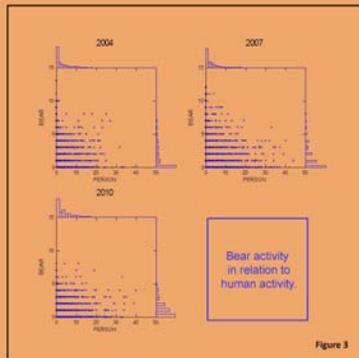


Figure 3

Analysis

Photographs were exported into ArcMap where object identification and location were digitized using a X/Y coordinate grid that was established for that purpose. Data was transferred into Access for organization and then exported into Systat for analysis. As depicted in Figure 1, bears use the Brooks River in July and September, with September being the more active month in the area of this study. July is when the wave of sockeye salmon that are migrating up Brooks River to Brooks Lake and its tributaries, as well as the upper section of Brooks River, are available for fishing bears, especially at the falls upriver from the study site. In August, the salmon that intend to spawn in Brooks River are massing below and above the river but there are few fish available in the river. In September, salmon spawning in Brooks River begin to die, and become an accessible and abundant resource for brown. The seasons of elevated bear activity coincide with elevated human activity, as depicted in Figure 2. Though bears use the area throughout the season, the highest documented bear activity occurs when relatively few or no people are present, as shown in Figure 3. This effect appears to be reflected in bear activity that makes use of the early morning and late evening hours, when human activity is relatively low, in contrast to the peak human activity levels in the middle of the afternoon as shown in Figure 4. Visitation to the park increases in the morning hours as flights carrying day visitors arrive. These day trips tend to end by the evening hours, giving bears more access to the river. Data from 2006, 2008, 2011 is still being digitized and analyzed. These results are comparable to the findings of a bear/people density study occurring on the Katmai Coast.

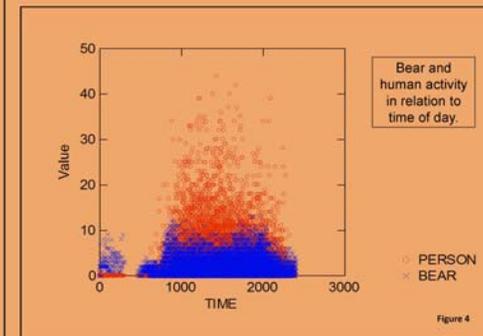


Figure 4