

## Roadkill numbers huge at Saguaro Park, officials say

### Saguaro National Park's roadkill, by animal class

According to a survey conducted in Saguaro National Park's two districts between 1994 and 1999 (the most recent data available), amphibians and small reptiles are the animals most commonly hit and killed by vehicles in these protected areas. Due to their small size, the report suggests, these animals are difficult for drivers to detect and avoid.



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Average annual estimate of animals killed by vehicles on the roads of Saguaro National Park



SOURCE: "Estimating annual vertebrate mortality on roads at Saguaro National Park, Arizona," Human-Wildlife Interactions, Fall 2010

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Many Tucsonans were saddened when a mountain lion was killed by a vehicle in Saguaro National Park last month - and they might be even more troubled to learn the magnitude of the roadkill slaughter.

Vehicles hit and kill about 30,000 wild animals - and possibly many more - in the park every year, officials say.

"We see pretty much everything hit and killed on roads in the park" - from mountain lions and bobcats to deer, coyotes, rabbits, birds, lizards, toads and snakes, said Natasha Kline, a biologist with Saguaro Park. "Roadkill has a significant impact on wildlife populations here."

Kline cited one reason for the carnage: Saguaro Park's two districts lie just east and west of busy metropolitan Tucson, and the park is crossed and bounded by some 48 miles of roads.

Some of the roads, such as the eight-mile loop in the east district, are closed at night, but main roads crossing the west district remain open day and night.

The danger those roads pose to wildlife is reflected in the daily work of wildlife rehabilitation centers, which care for injured animals.

"We see lots of animals that have been hit by vehicles - especially javelinas and coyotes," said Sheila Chonis, development director of the Tucson Wildlife Center. The center, at 13275 E. Speedway, is just north of Saguaro Park's east district.

"It's a growing problem because of the growing population infringing on wildlife habitat," Chonis said.

### MORTALITY STUDY

A report about two years ago summarized data gathered over a six-year period on roadkill deaths of vertebrates - animals with backbones, including mammals, reptiles, amphibians and birds.

The report - "Estimating Annual Vertebrate Mortality on Roads at Saguaro National Park, Arizona" - was prepared by Kline and a team of fellow scientists.

"The majority of killed animals were amphibians and small reptiles, but birds and mammals also were killed in large numbers," the report found.

The study estimated that an average of 29,377 vertebrates were killed annually during the

study period from January 1994 to December 1999.

Researchers tabulated roadkill observations from hundreds of driving surveys and some simultaneous walking surveys - and then applied mathematical techniques to arrive at the estimate for annual roadkills.

Kline said it's likely the total is an underestimate. "We were very conservative," she said.

The report explains why some, or many, road-killed animals might not be included in the total: "These numbers are difficult to estimate because such mortality patterns vary greatly in space and time and by taxonomic group. Additionally, animals killed by vehicles may be difficult to observe, particularly during driving surveys, and carcasses may not persist between surveys due to scavenging and other factors."

## WEST DISTRICT DANGER

The west district of Saguaro Park, covering about 24,000 acres, turned out to pose much greater roadkill dangers than the 67,000-acre east district.

"We documented over twice as many road-killed animals in the Tucson Mountain (west) District as we did in the Rincon Mountain (east) District," Kline said.

The totals for the study period were 20,599 vertebrates killed annually in the west district and 8,778 in the east district.

Kline said the likely reason for the difference is that the west district "is much more bisected and segmented by roads."

"Picture Rocks Road and Sandario Road are busy commuter roads, and they bisect the park," Kline said. "There is a lot of traffic on them. To some animals, it can be like a gantlet. ... A lion or deer can cross a busy road a hundred times, but all it takes is once to get hit and killed."

## REDUCING THE TOLL

Park officials said several measures could help reduce the number of animals falling victim to roadkill. Among them:

- Closing some roads. While effective, such a strategy is highly controversial because it would limit vehicle access to parts of the park and possibly eliminate important and heavily used commuter routes.
- Encouraging slower and more careful driving on park roads.
- Using so-called "traffic calming measures," which could include things such as signs, speed humps and increased enforcement.
- Using fences, underpasses, overpasses and culverts to keep wildlife from crossing roads.

Contact reporter Doug Kreutz at [dkreutz@azstarnet.com](mailto:dkreutz@azstarnet.com) or at 573-4192. On Twitter: [@DouglasKreutz](https://twitter.com/DouglasKreutz)