



Jaguar in Belize

## Jaguar Track Measurements in Belize

Jaguars and Peccaries in Corcovado National Park, Costa Rica

Monitoring Jaguars in the Cockscomb Basin, Belize

Movements, Habitat and Prey Relations of Jaguars in SE Sonora, Mexico

Jaguar-Livestock Conflict in NE Sonora, Mexico

Subsistence Hunting in the Maya Biosphere Reserve, Guatemala

Jaguar and Prey Monitoring in Belize

Borderlands Jaguar Detection, Mexico/U.S.

Livestock Depredation in the Pantanal, Brazil

Impact of Jaguars at the Rio Platano Biosphere Reserve, Honduras

Jaguar and their Prey, Guatemala

Human-Jaguar Conflict, Belize

Community Outreach and Education, U.S.

Jaguars on Private Lands, Venezuela

Rancher Outreach Program, Brazil

## The Jaguar Conservation Program is one component of the Global Carnivore Program

### WCS in Belize

The Gallon Jug Estate in northwestern Belize, lies in the heart of the Maya Forest shared by Belize, Guatemala, and Mexico. Buffered on all sides by extensive tropical forest, Gallon Jug Estate is uniquely well protected from hunting and human settlement pressures. Its conspicuous wildlife, including the jaguar, makes it an ideal field research test site. Remote camera-trap studies have been ongoing for more than a decade here.

### The Human Aspect

In 1999, WCS and Jaguar Cars sponsored an international meeting that convened experts from across the range of the jaguar. This group resolved to develop techniques to monitor jaguar populations since they are not easily surveyed. Such techniques are necessary in order to implement appropriate conservation actions. In northwestern Belize, jaguars are un hunted and appear to be relatively common. The Gallon Jug Estate offers excellent opportunities to develop and test innovative new techniques.

### Threats

Throughout its range, jaguars are most threatened by habitat loss and hunting of prey species as well as hunting of jaguars themselves. This holds true for much of Belize and the Maya Forest, or La Selva Maya. However, Gallon Jug provides strong protection areas and functions as a “wildlife factory” to allow dispersal of wildlife including jaguars throughout La Selva Maya region.

### Highlights

#### Total Area

- 323 mi<sup>2</sup>
- 520 km<sup>2</sup>

#### Habitat Types

- lowland tropical moist forest

#### Wildlife Present Birds

- ocelated turkey
- white-whiskered puffbird
- purple-crowned fairy
- ornate hawk-eagle

#### Mammals

- jaguar
- puma
- ocelot
- margay
- jaguarundi
- brocket deer
- white-tailed deer
- black howler monkey
- white-lipped peccary

#### Plants

- give-and-take palm
- passionflowers
- sensitive plant

#### WCS Involvement

- since 1980





Jaguar tracks

Habitat loss and subsequent fragmentation from proposed road development schemes is a major concern.

### WCS Activities

Jaguars are secretive, intelligent, and elusive animals making them challenging to survey or monitor. Direct methods, such as simply counting them, do not work. However jaguars do leave tracks. The development of a method to determine individual identity from tracks is underway. A software-assisted technique to measure tracks has shown promising results in differentiating individual jaguars and pumas by an extensive series of foot measurements. Although the actual measurement technique is highly sophisticated and employs recent technology, the actual data collection in the field is easily accomplished by simply photographing the tracks. When perfected, this method may offer another tool for researchers to assist in determining where jaguars are and what their status is. Where jaguars are and aren't will be important when formulating conservation actions for monitoring efforts.

### Important Next Steps

- Finalize the technique with custom written software.
- Distribute the entire survey "package" to researchers interested in employing it at their own field sites.
- Act as a clearinghouse for incoming data.
- Troubleshoot, fine tune, and test robustness of the technique.
- Implement range wide jaguar surveys employing this method where appropriate.

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### Photography:

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### Mission

The Wildlife Conservation Society's International Conservation program saves wildlife and wild lands by understanding and resolving critical problems that threaten key species and large, wild ecosystems around the world.

### WCS Strategies

- Site-based conservation
- Research
- Training and capacity-building
- New model development
- Informing policy
- Linking zoo-based and field-based conservation

