# GIS (Geographic Information Systems) Studies and Maps of Cloudbridge

by John Tingerthal

Summary:

What is GIS?
Objectives
Results

What is GIS?
GIS is a map-based technique that uses computer graphics to combine a map with other databases (such as land use, soil type, vegetation, etc) to create "geographic information systems" or GIS for short.

GIS layersThe method is employed to display and analyze spatial data which are tied to a relational database. This connection is what gives GIS its power: maps can be drawn from the database and data can be referenced from the maps. When a database is updated, the associated map can be dynamically updated as well. GIS databases include a wide variety of information: geographic, social, political, environmental, and demographic.

GIS uses layers, called "themes," to overlay different types of information, much as some physical maps use mylar overlays to add tiers of information to a geographic background. Each theme represents a category of information, such as forest cover or trails or structures. As with mylar maps, the layers which are underneath remain visible while additional themes are placed above.

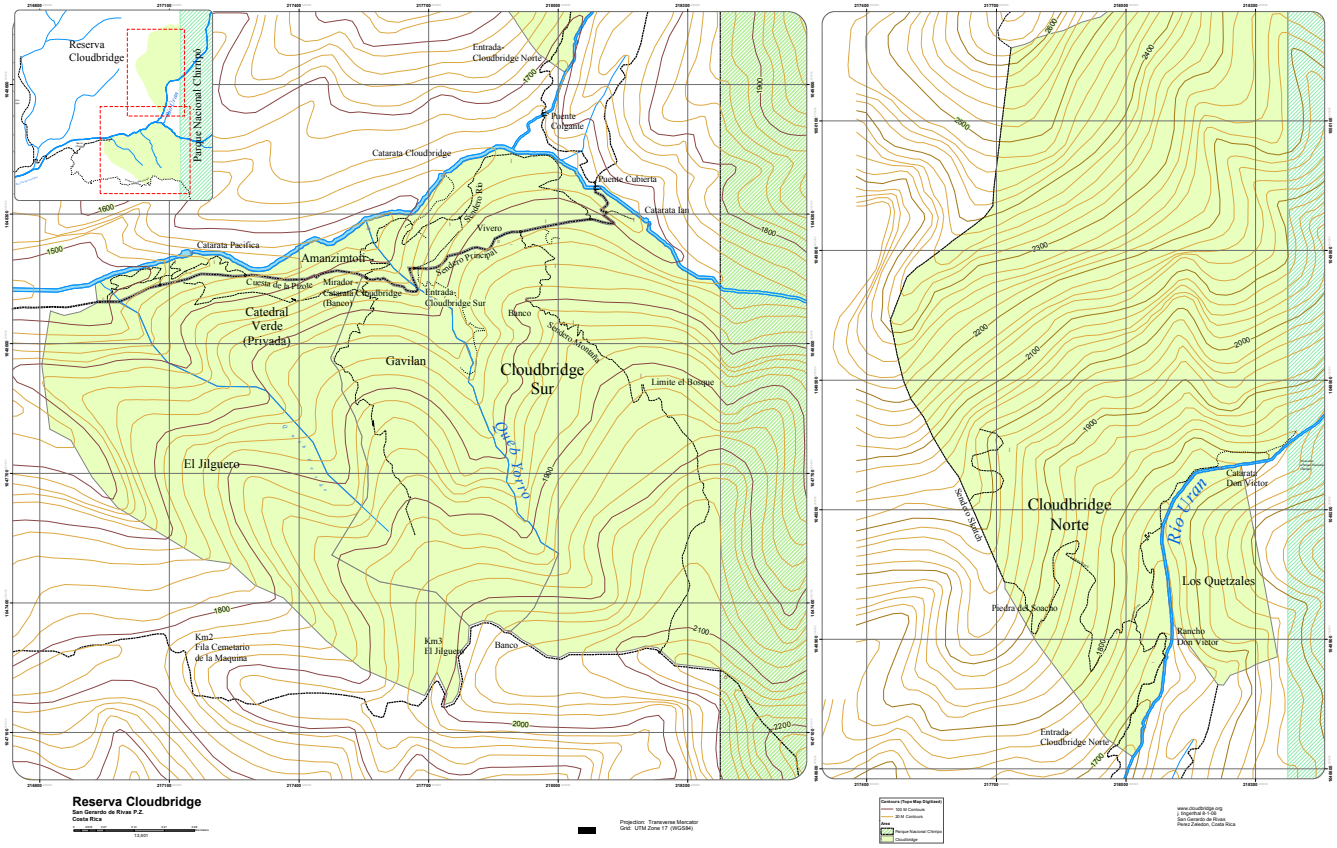
Objectives of the Ongoing Cloudbridge GIS Studies

Map boundaries and major landmarks of Cloudbridge
Create a layer or theme database containing contour lines based on existing topographical map
Create a theme database of trails, rivers and streams
Create a theme database of the perimeters of significant vegetative areas
Create a theme database of the perimeters of the reforestation project sub-areas
Create a theme database of the habitat recovery study
Create a theme database of soil types and conditions
Assemble data in GIS-compatible format on flora and fauna inventories, including trees, plants, and birds.
Create data layers that can demonstrate distribution of inventoried flora and fauna
Trace and map changes over time of inventoried flora and fauna

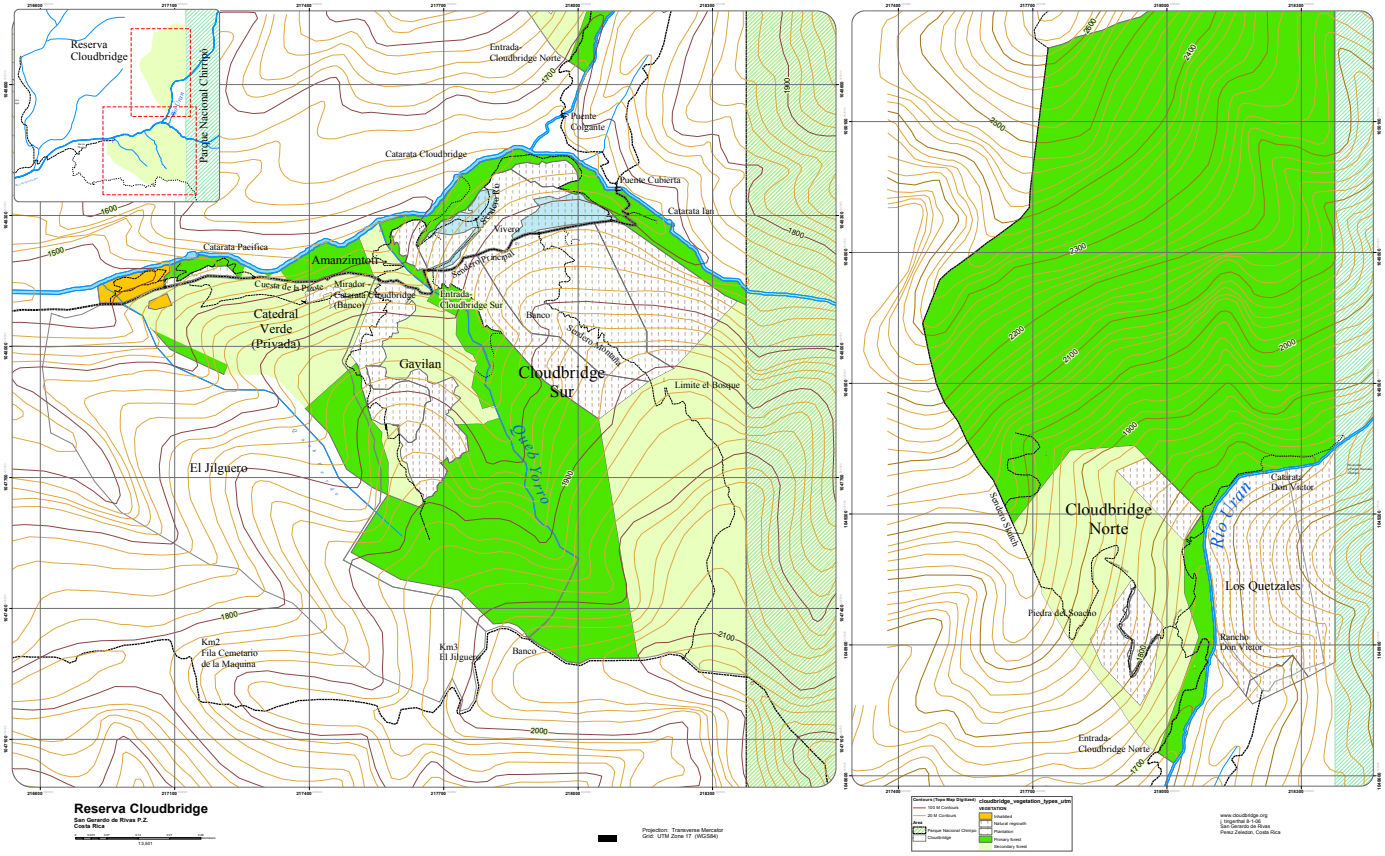
Results

John Tingerthal has developed GIS maps of Cloudbridge that incorporate the results of several studies, including biomonitoring, treemonitoring and vegetative cover. The following illustrate three of the major results -- contour maps and vegetative cover, and the trails used by visitors. These and other mappings are stored as "shape files" for use with the Arcview series of GIS software. Click on the images for larger views.

Map 1. Elevation contours.
Cloudbridge elevation contours

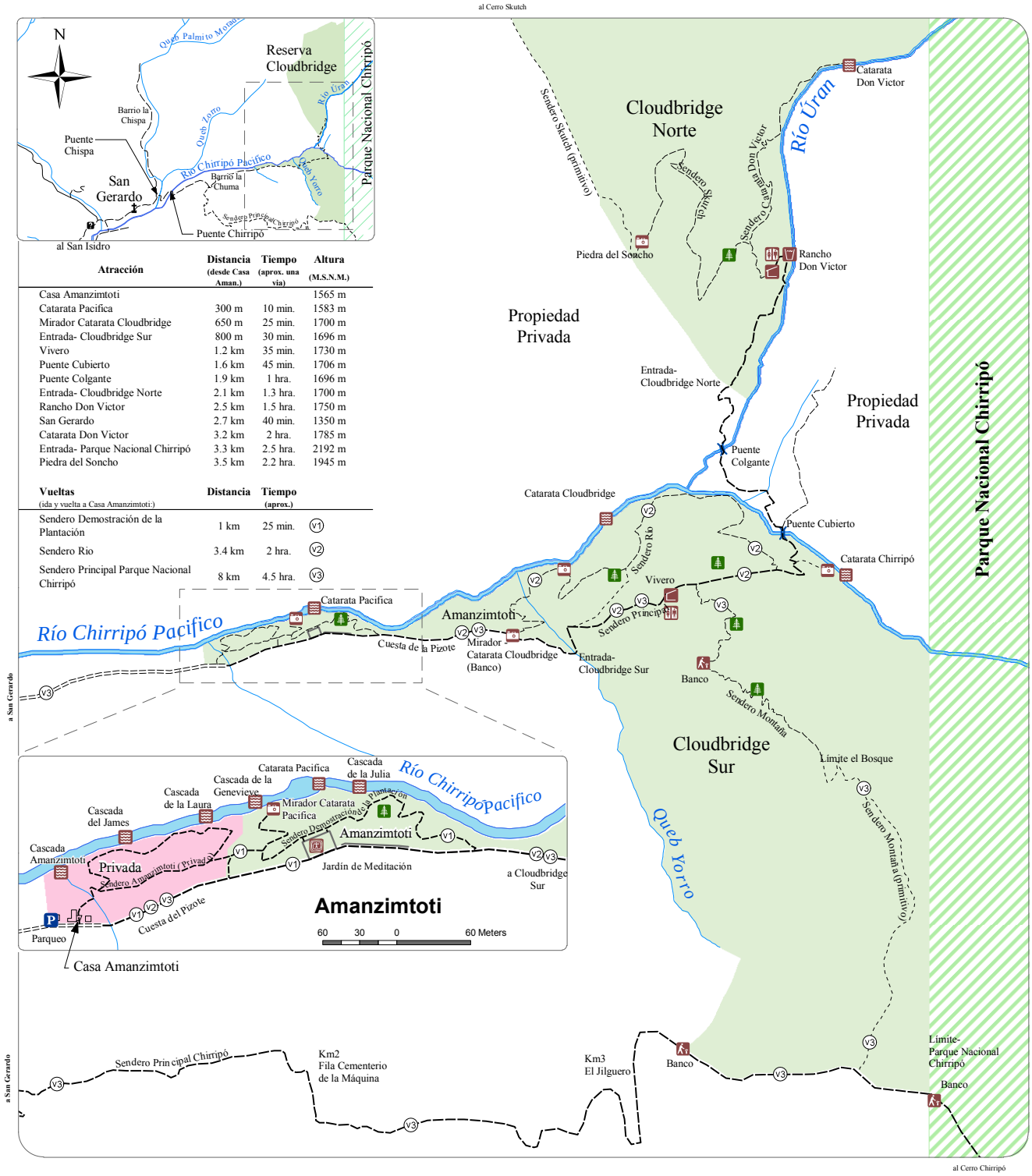


Map 2. Vegetative cover.
Cloudbridge vegetation cover




The results on vegetation are based on the 2006 Land Use Study by Sebastian Culbreth. All the other data have been gathered by John Tingerthal with additional work done by Jessica Schwartz, Tom Gode, and others.

Map 3. Trails.
Cloudbridge Trails




| Atracción | Distancia (desde Casa Aman.) | Tiempo (aprox. una vía) | Altura (M.S.N.M.) |
|---|---|---|---|
| Casa Amanzimtoti | | | 1565 m |
| Catarata Pacífica | 300 m | 10 min. | 1583 m |
| Mirador Catarata Cloudbridge | 650 m | 25 min. | 1700 m |
| Entrada- Cloudbridge Sur | 800 m | 30 min. | 1696 m |
| Vivero | 1.2 km | 35 min. | 1730 m |
| Puente Cubierto | 1.6 km | 45 min. | 1706 m |
| Puente Colgante | 1.9 km | 1 hra. | 1696 m |
| Entrada- Cloudbridge Norte | 2.1 km | 1.3 hra. | 1700 m |
| Rancho Don Victor | 2.5 km | 1.5 hra. | 1750 m |
| San Gerardo | 2.7 km | 40 min. | 1350 m |
| Catarata Don Victor | 3.2 km | 2 hra. | 1785 m |
| Entrada- Parque Nacional Chirripó | 3.3 km | 2.5 hra. | 2192 m |
| Piedra del Soncho | 3.5 km | 2.2 hra. | 1945 m |

| Vueltas (ida y vuelta a Casa Amanzimtoti:) | Distancia | Tiempo (aprox.) | |
|---|---|---|---|
| Sendero Demostración de la Plantación | 1 km | 25 min. | V1 |
| Sendero Río | 3.4 km | 2 hra. | V2 |
| Sendero Principal Parque Nacional Chirripó | 8 km | 4.5 hra. | V3 |

# Reserva Cloudbridge

**San Gerardo de Rivas P.Z.**
**Costa Rica**

Vivero
Rancho Don Victor
Plantación
Refugio
Banco
Catarata
Mirador
Agua Potable
Baño
Puente
Parqueo

*j. tingerthal Mayo, 2005*

0 0.125 0.25 0.5 0.75 1 Kilometers

1:10,000

Este mapa fue hecho con donaciones a la Reserva Cloudbridge

www.cloudbridge.org
San Gerardo de Rivas
Pérez Zeledón, Costa Rica