

Fieldwork of Tropical Wetland in Brazil: Case of the Pantanal

Takaaki NIHEI (Hokkaido University)

I. Introduction

II. Data collection in Japan

III. Data collection in urban area
of Brazil

IV. Fieldwork in the wetland

(1) Observation of landscape

(2) Making maps with GPS and GIS

(3) Survey of grazing cattle

(4) Interviews

V. Conclusion

I. Introduction

(1) Geographers aware the importance of fieldwork.
However, the methodology differs among researchers.

(2) Former Studies: Many books explain the methodology of fieldwork in Japan. However, few books explain the fieldwork in foreign countries.

(3) Presenter's Specializations: I specialize in agricultural geography and regional geography (North America and Latin America)

e.g., Kajita et al 2007. *Introduction of fieldwork*.

Nakanishiya Publishing. [In Japanese]

-> Importance of statistical data, base-maps, and aero photographs for fieldwork

(4) Purpose of This Study

As a part of the research that aims at systematizing the methodology of fieldwork, this study examines the fieldwork of tropical wetland through the cases of our experiences in Brazil*.

* JSPS Grant-in-Aid for Scientific Research organized by Maruyama, H.

1) 2001-2003: Sustainable development and environmental preservation of tropical wetland in the Pantanal, Brazil.

2) 2004-2006: Comprehensive strategy for environmental conservation of tropical wetland in the Pantanal, Brazil.

3) 2007-2010: Environmental conservation and endogenous development through traditional management system of wetland in the Brazilian Pantanal.

Fig.1 Location of the Brazilian Pantanal

a. Location of Brazilian Pantanal



b. Subregions of Brazilian Pantanal

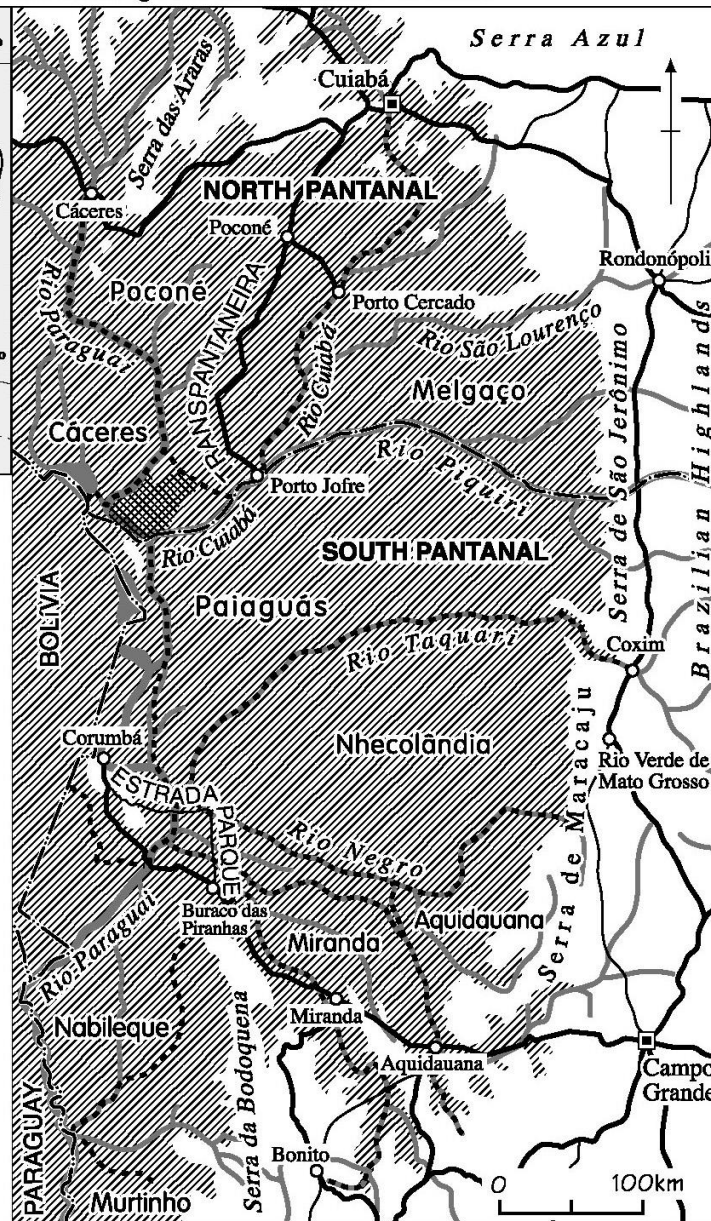


Fig.2 Aero Photo of the Pantanal



(Aquidauana, March, 2011)

II. Data Collection in Japan

(1) Journals

a. Academic Journals

“Revista Terra Livre (Journal of Free Earth)” by AGB (Associação dos Geógrafos Brasileiros)

“Revista Brasileira de Geomorfologia (Brazilian Journal of Geomorphology)” by UGB (União da Geomorfologia Brasileira)

b. Journals for Brazilian Studies in Japan

“Latin American Studies” by Special Research Project on Latin America, the University of Tsukuba (1980-1995)

“Bulletin of Latin American Institute” by Institute of Latin American Studies, Rikkyo University (1973-)

(2) Maps and Statistics

a. IBGE (Instituto Brasileiro de Geografia e Estatística)

<http://www.ibge.gov.br/>

-> Census of Agriculture, Statistics for States (Estados) and Cities (Cidades), Thematic maps (land use and vegetation) , Topographic maps.

b. Other Institutes:

EMBRAPA (Empresa Brasileira de Pesquisa Agropecuária)

IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis)

III. Data Collection in Urban Area of Brazil

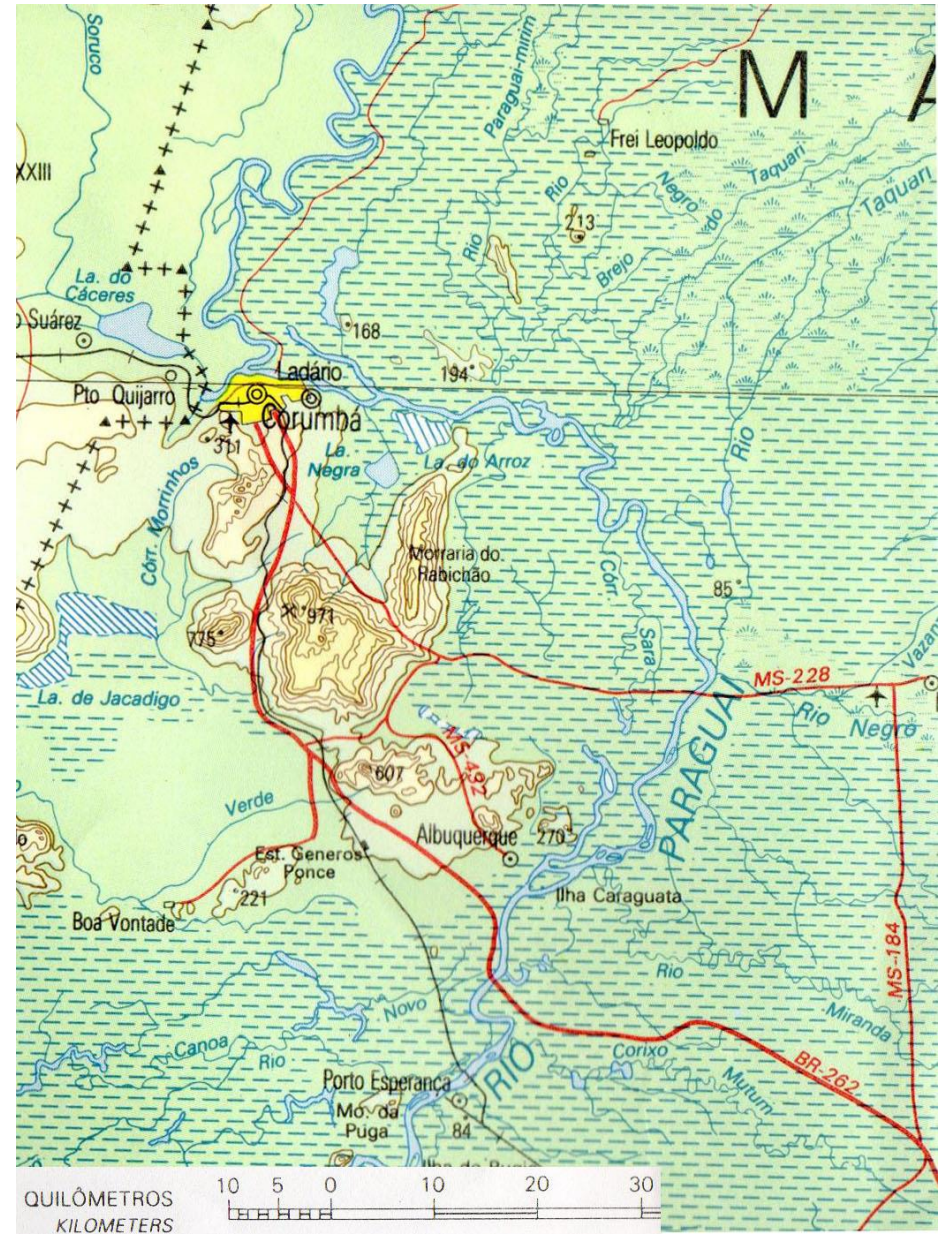
(1) Maps

- a. IBGE's topographic map
- b. Guia Quatro Rodas Brasil
- c. Maps of farm (fazenda)

(2) Bulletins, Statistics and Books

- a. Libraries and bookstores in Universities
- b. Reference room of Institutes (such as EMBRAPA)
- c. SEBO (secondhand bookstore)

Fig 3 Topographic map of Corumbá (1/1,000,000)



IV. Fieldwork in the Wetland

(1) Observation of Landscape

a. Photographs of landscape, geographical photograph

-> documentation of a scene
(comprehensive or focusing)

b. Video cameras

-> record of sequential scenes
(substitute for still cameras
and voice recorders)

Fig 4. Tuiuiu (Jabiru)
(August, 2004)



IV-(2). Making Maps with GPS and GIS

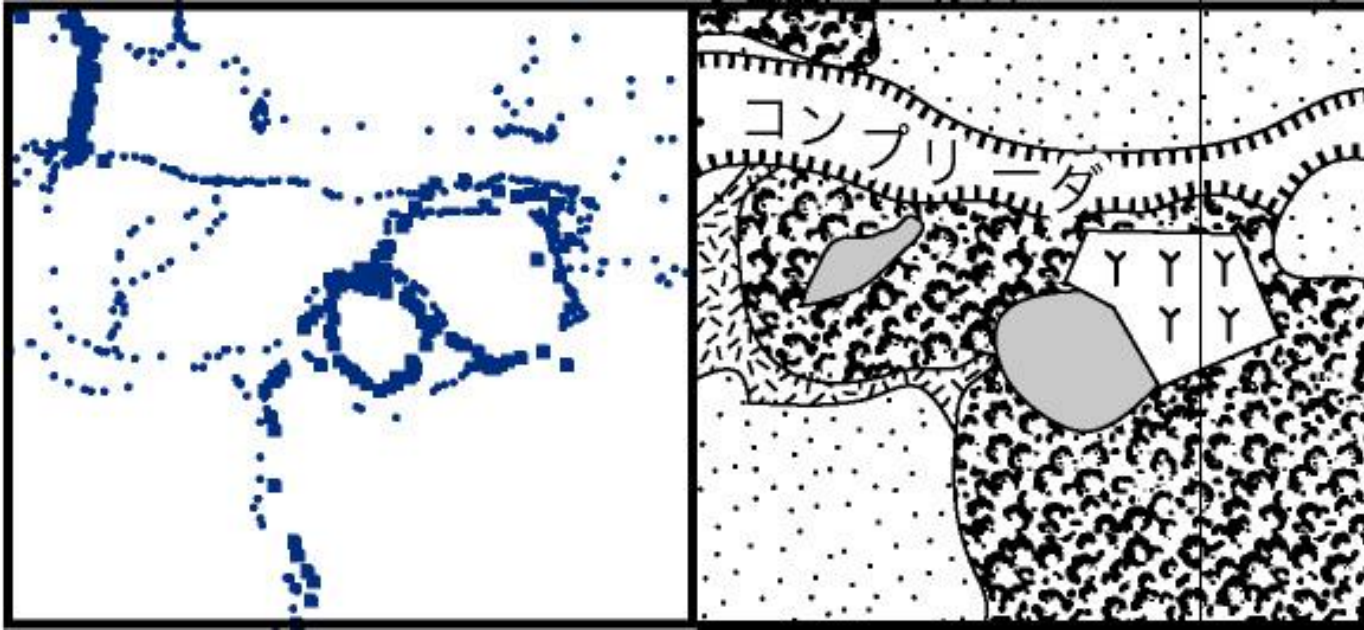
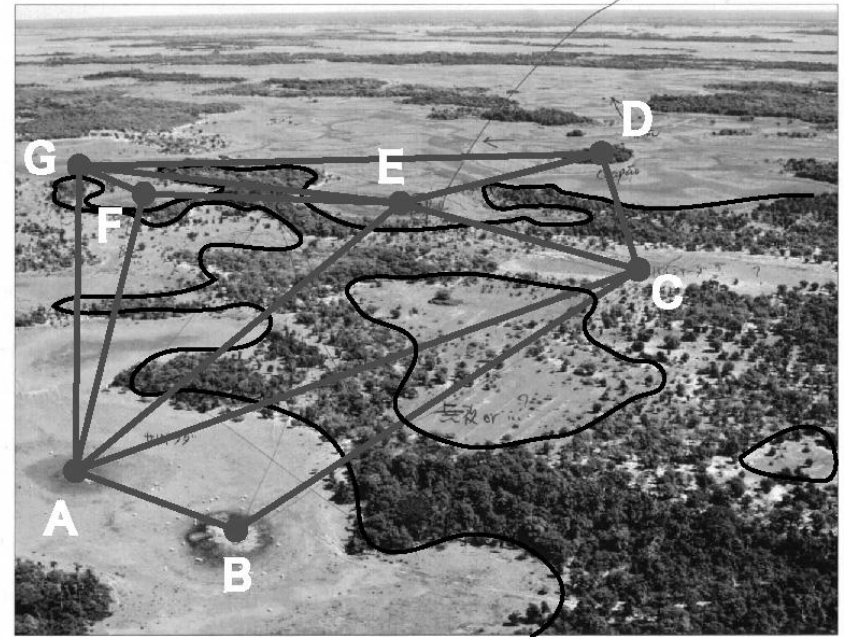


Fig 5 Track data of GPS and land-use in Fazenda Baía Bonita
(scale: about 800m for each side of squares)

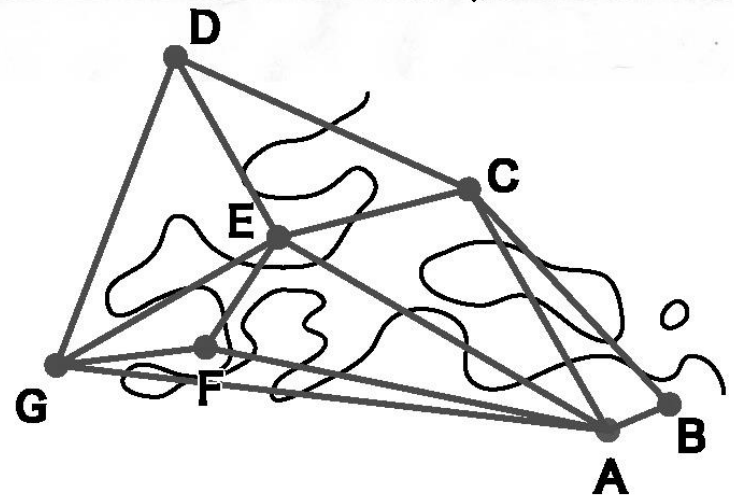
[Reference] Maruyama and Nihei 2005. Biotope map of the Southern Pantanal in Brazil. *Journal of Geography* 114. (in Japanese)

Fig.6 Aerial Photograph and Triangulation

a. 空中写真



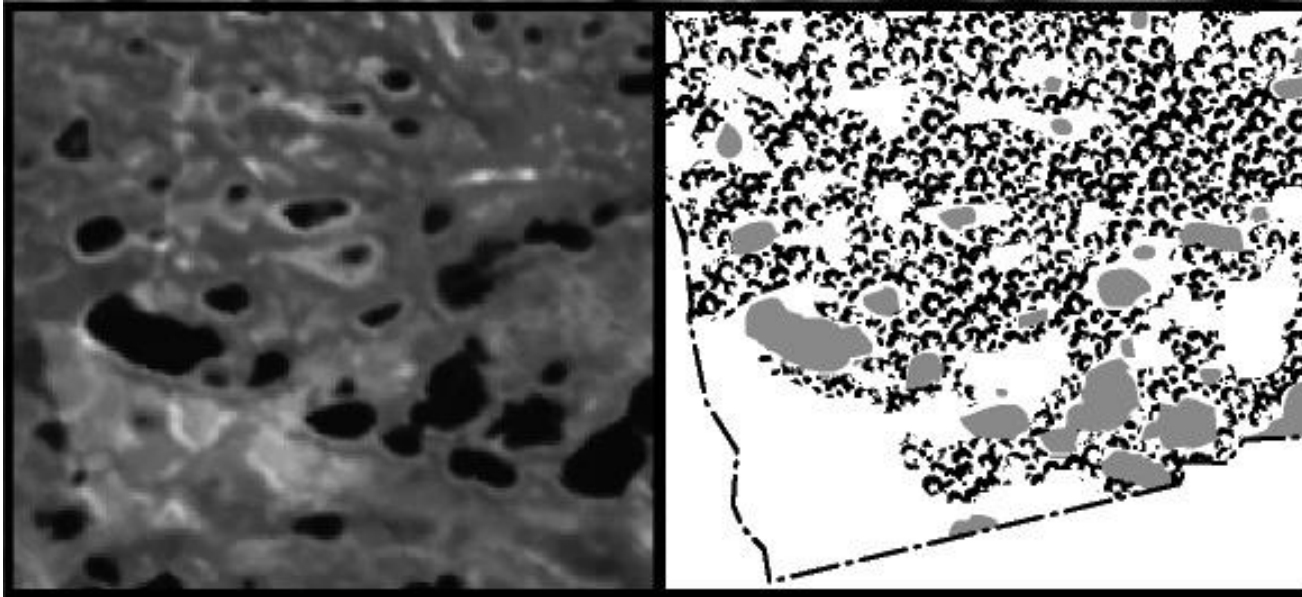
b. 地図



[Reference]

Maruyama and Nihei 2005.
Biotope map of the Southern
Pantanal in Brazil. *Journal of
Geography* 114. (in Japanese)

Fig 7. Satellite Image and Land-use in Fazenda Campo Neta



(scale: about 800m for each side of squares)

[Reference]

Nihei and Kojima 2011. Introduction and growth of ecotourism. In Maruyama, H. ed. *Pantanal*. Kaiseisha Press. (in Japanese)

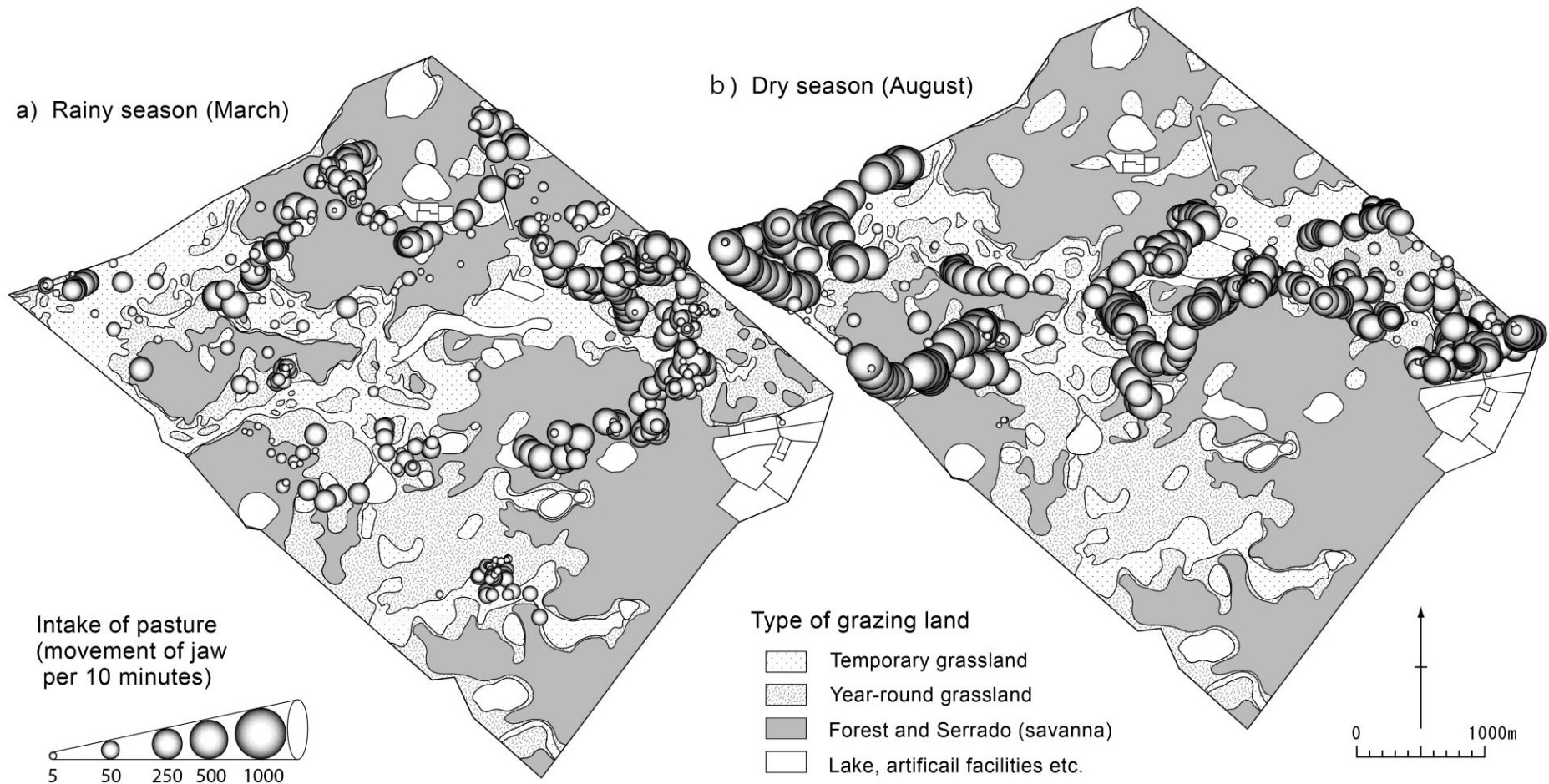
IV-(3). Survey of Grazing Cattle

Fig 8. Cow with Bite Counter Collar and GPS (March 2005)



[Reference] Maruyama, H. and Nihei, T. 2007. Grazing behavior of cows measured by handheld GPS and bite counter collar. *Japanese Journal of Human Geography* 59: 30-43. (in English)

Fig. 9 Overlay of Land-use map and cows' movement and intake of grass (March and August in 2005)



[Reference] Maruyama et al. 2009. Traditional management of Fazenda and its problems. *Geographical Space* 2: 99-132. (in Japanese)

IV-(4). Interviews

Table 1 Part of my interview list

- 1 Em que ano começou a funcionar este Hotel [esta Pousada]?
- 2 Qual o motivo pelo qual iniciou o trabalho com a Pousada na região da Estrada Parque?
- 3 Quantos quartos tem? [Qual o número de quartos?]
(How many rooms do you have?)
- 4 Qual é a Capacidade de atendimento dos turistas?
- 5 Quanto é a diária?
- 6 Qual é a área do hotel?
- 7 ...

[Reference] Maruyama et al. 2005.
Ecotourism in the north Pantanal,
Brazil. *Geographical Review of
Japan* 78: 289-310. . (in English)



V. Conclusions

(1) Brazilian institutes publishes many data on the internet, e.g., small scale maps and statistics by IBGE (Brazilian Institute of Geography and Statistics). We should use them before going fields.

(2) To make land-use maps and thematic maps, several materials and techniques required, i.e.,

- a. Topographic map for the base map of study area.
- b. GPS and satellite images for land-use map.
- c. Bite counter collar for the map of animal husbandry.

(3) Interview with local people completes the maps, and consists important part of our fieldwork.

Acknowledgement

This study is one of the results of JSPS (Japan Society for the Promotion of Science) Grant-in-Aids:

- (1) Scientific Research A No.23401003 by Yuji MURAYSMA,
- (2) Scientific Research B No.23401003 by Norio TASE,
- (3) Scientific Research B No.24520883 by Hiroaki MARUYAMA,
- (4) Scientific Research C No.24520883 by Yuichi HASHIMOTO,
- (5) Young Scientist B No.23720398 by Takaaki NIHEI.