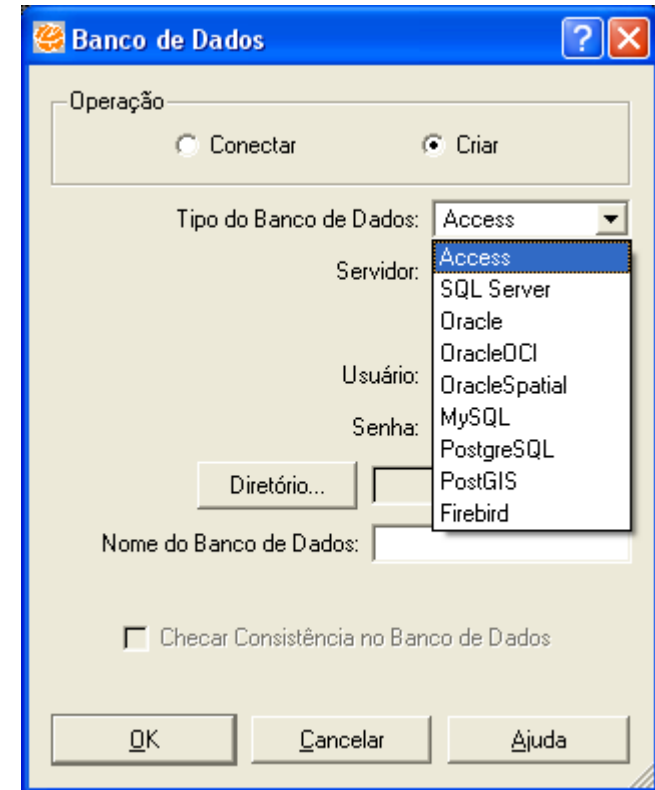
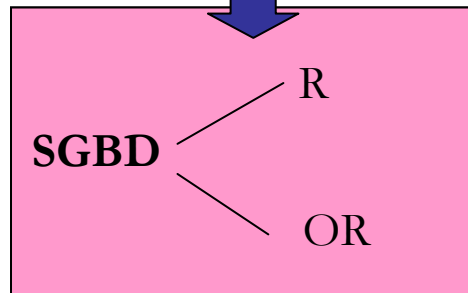
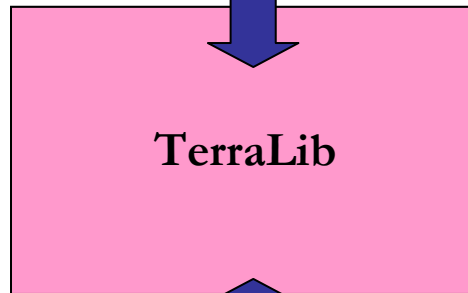
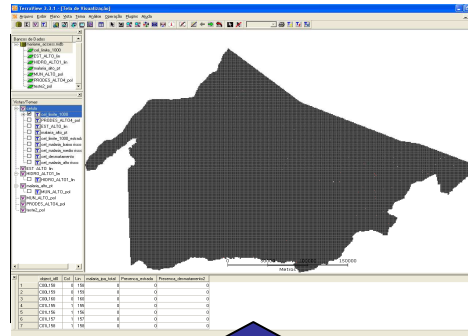


Exploração da Estrutura de Armazenamento
Celular em Modelo TerraLib
em Aplicações Geográficas para três
Sistemas Gerenciadores de Banco de Dados:
O caso do alto Purus em Células para o Estudo da
Malária

Bancos de dados Geográficos

Mariane Assis
Agosto de 2009

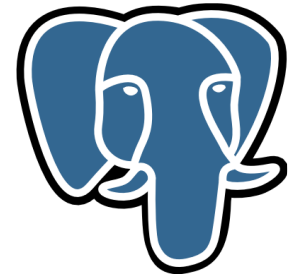
Modelo Terralib





SGBD RELACIONAL:

Access e PostgreSQL



Polygon

geom_id: INTERGER
Object_id: VARCHAR (255)
num_coords: NUMBER
num_holes: NUMBER
parent_id: NUMBER
lower_x: NUMBER (20,10)
lower_y: NUMBER (20,10)
upper_x: NUMBER (20,10)
upper_y: NUMBER (20,10)
wxt_max: NUMBER (20,10)
spatial_data: BLOB

Lines

geom_id: INTERGER
Object_id: VARCHAR (255)
num_coords: NUMBER
lower_x: NUMBER (20,10)
lower_y: NUMBER (20,10)
upper_x: NUMBER (20,10)
upper_y: NUMBER (20,10)
wxt_max: NUMBER (20,10)
spatial_data: BLOB

Points

geom_id: INTERGER
Object_id: VARCHAR (255)
x: DECIMAL (20,10)
y: DECIMAL (20,10)



SGBD RELACIONAL:

Access e PostgreSQL

Métodos de acesso para dados espaciais

SGBD	R-tree	Quad tree	Fixed-Grid	Kd-tree	B-tree
Access	Não	Não	Não	Não	Sim
Postgre SQL	Sim	Sim	Não	Sim	Sim



SGBD OBJETO-RELACIONAL: PostGIS

Polygons

geom_id: INTEGER
object_id: VARCHAR (255)
spatial_data: GEOMETRY

Lines

geom_id: INTEGER
object_id: VARCHAR (255)
spatial_data: GEOMETRY

Points

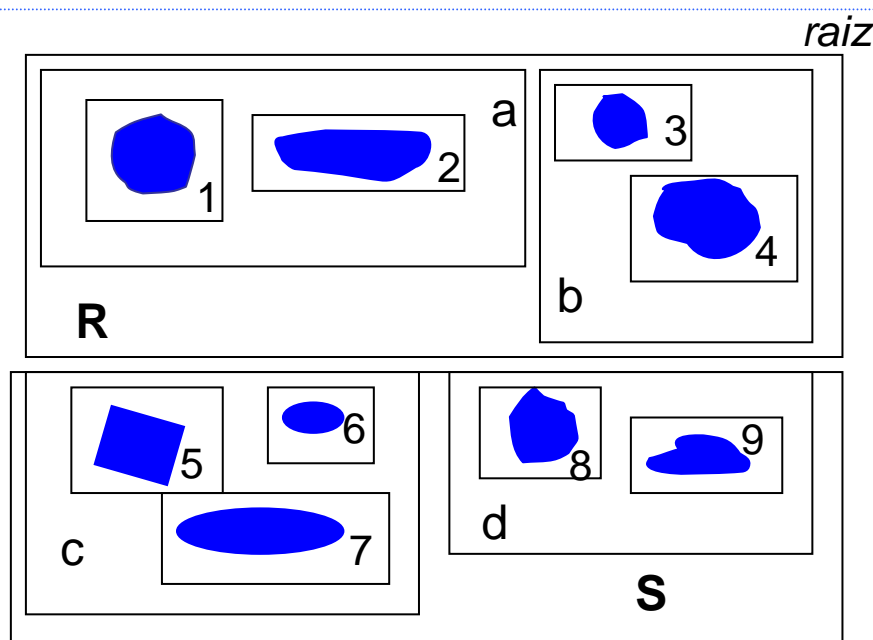
geom_id: INTEGER
object_id: VARCHAR (255)
spatial_data: GEOMETRY



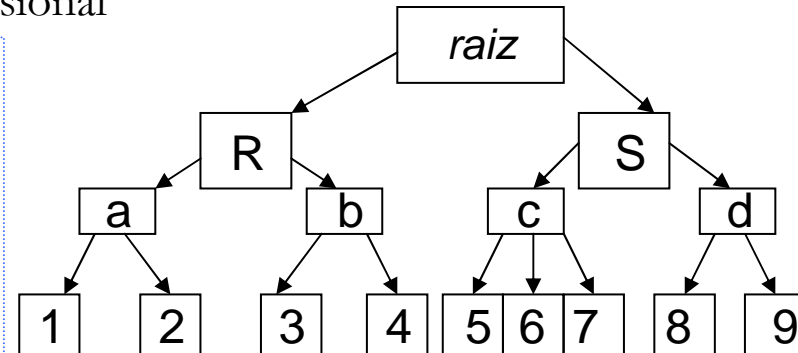
SGBD OBJETO-RELACIONAL: PostGIS

Métodos de acesso para dados espaciais

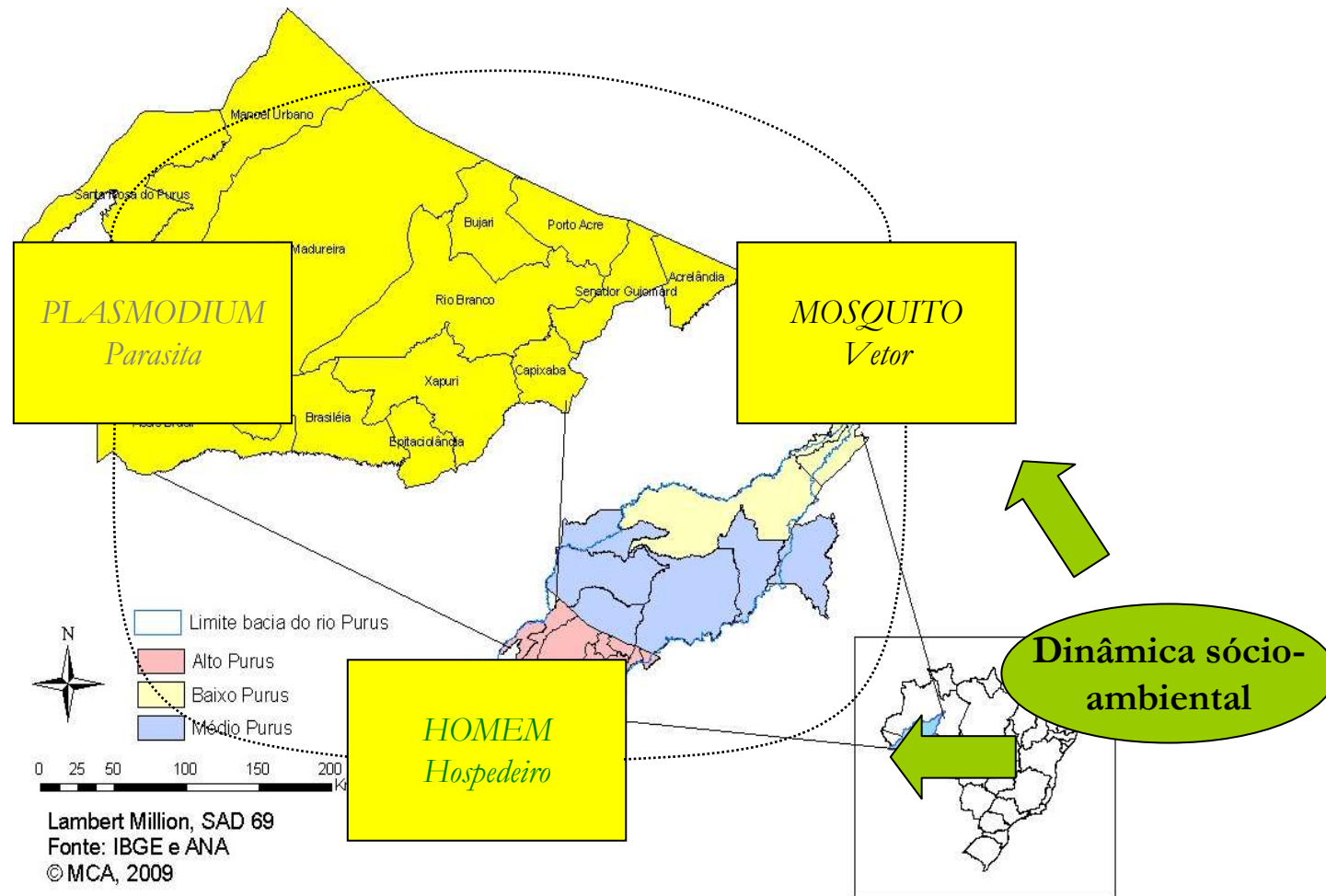
PostGIS: B-tree, R-tree, HASH. Multidimensional



R-tree

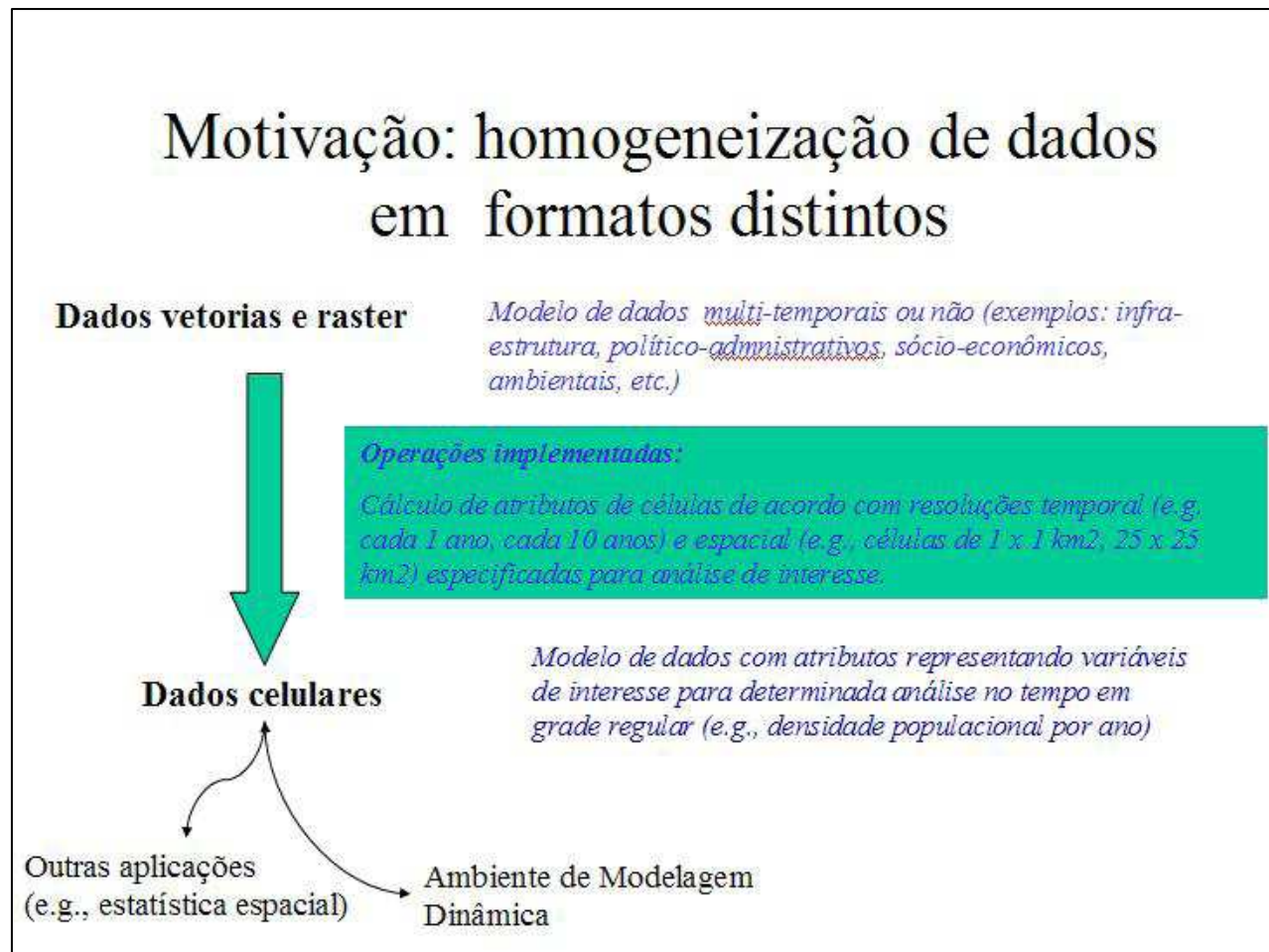


O caso do alto Purus em Células para o Estudo da Malária

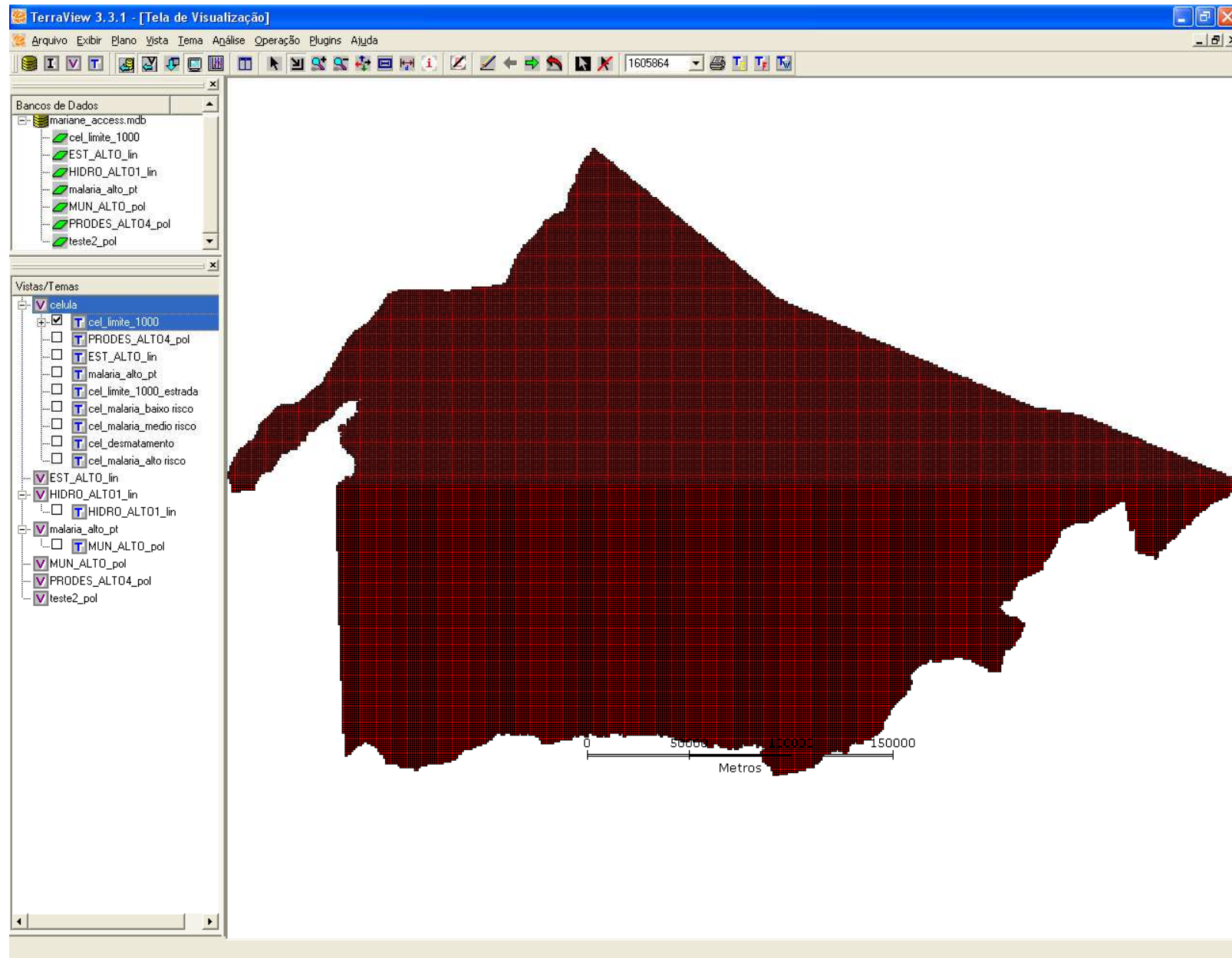


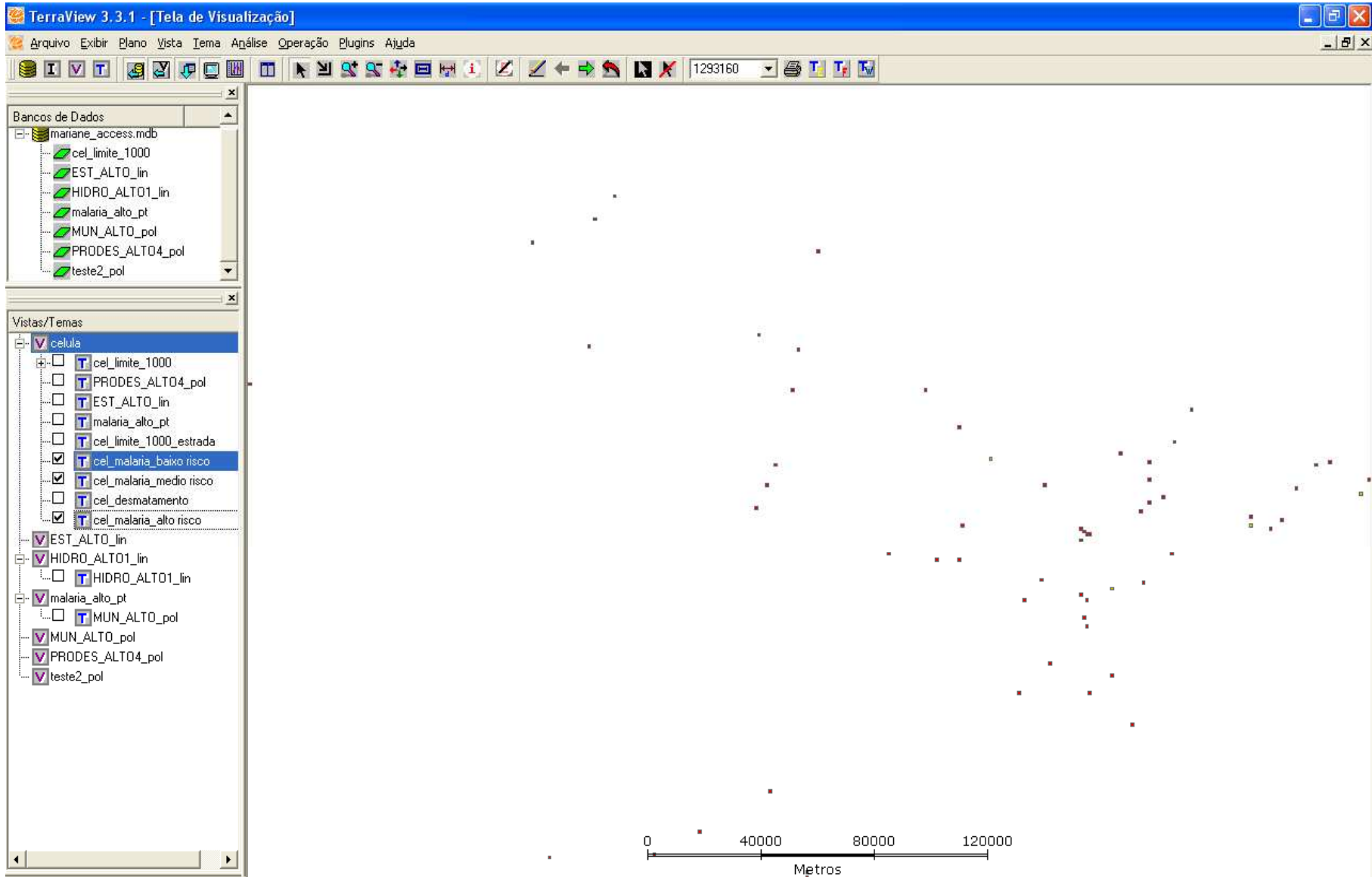
O caso do alto Purus em Células para o Estudo da Malária

Espaço Celular



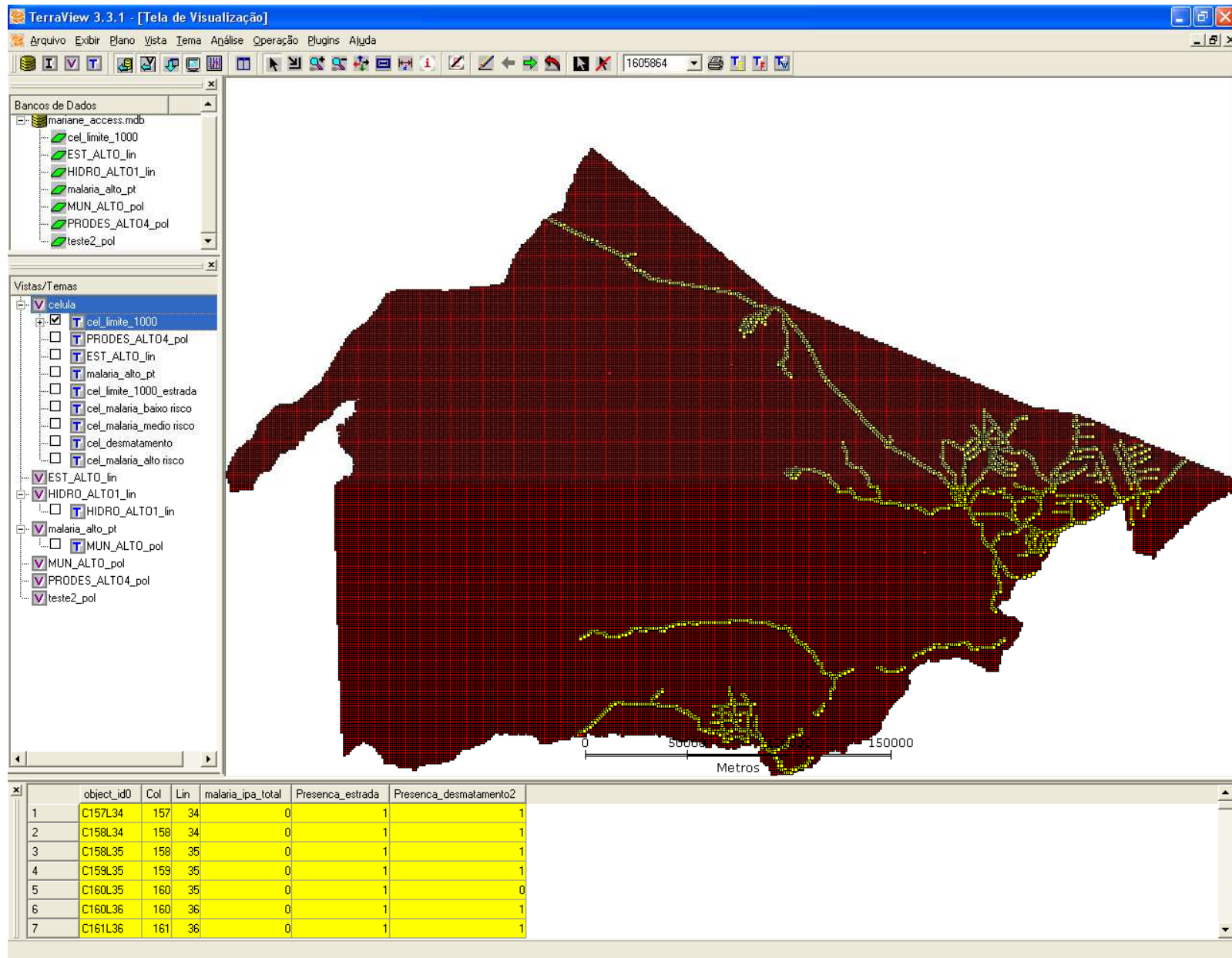
Espaço Celular





	object_id0	Col	Lin	malaria_ipa_total	Presenca_estrada	Presenca_desmatamento2
1	C172L286	172	286	2	0	1
2	C186L109	186	109	3	0	0
3	C195L57	195	57	2	0	1
4	C246L105	246	105	6	0	0
5	C263L291	263	291	1	1	1
6	C267L76	267	76	2	0	1
7	C340L197	340	197	4	0	1

Espaço Celular: Preenchimento de células



Consulta1 : Consulta seleção

SELECT *FROM cel_limite_1000 WHERE presenca_estrada = 1;

Microsoft Access - [Consulta1 : Consulta seleção]

Arquivo Editar Exibir Inserir Formatar Registros Ferramentas Janela Ajuda

Digite uma pergunta

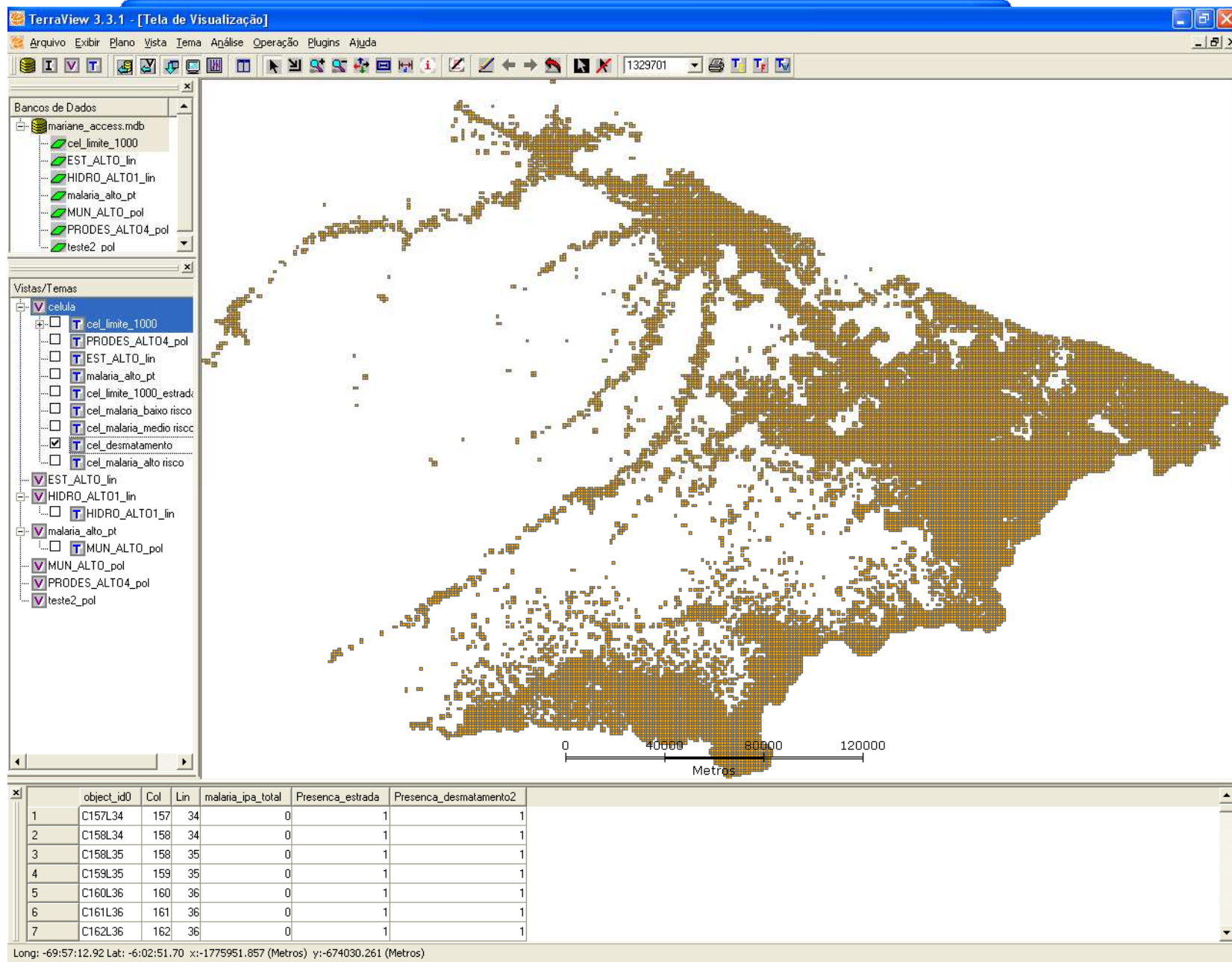
object_idD	Col	Lin	malaria_ipa_tot	Presenca_estrada	Presenca_desn
C157L34	157	34	0	1	1
C158L34	158	34	0	1	1
C158L35	158	35	0	1	1
C159L35	159	35	0	1	1
C160L35	160	35	0	1	0
C160L36	160	36	0	1	1
C161L36	161	36	0	1	1
C162L36	162	36	0	1	1
C162L37	162	37	0	1	1
C163L37	163	37	0	1	1
C164L37	164	37	0	1	1
C164L38	164	38	0	1	1
C165L38	165	38	0	1	1
C166L38	166	38	0	1	1
C166L39	166	39	0	1	1
C167L39	167	39	0	1	1
C168L39	168	39	0	1	1
C168L40	168	40	0	1	1
C169L40	169	40	0	1	1
C170L40	170	40	0	1	1
C170L41	170	41	0	1	1
C171L41	171	41	0	1	1
C172L41	172	41	0	1	1
C180L46	180	46	0	1	1
C181L46	181	46	0	1	1
C182L46	182	46	0	1	1
C172L42	172	42	0	1	1
C173L42	173	42	0	1	1
C174L42	174	42	0	1	1
C174L43	174	43	0	1	1
C175L43	175	43	0	1	1
C176L43	176	43	0	1	1
C176L44	176	44	0	1	1
C177L44	177	44	0	1	1
C178L44	178	44	0	1	1
C178L45	178	45	0	1	1
C179L45	179	45	0	1	1
C180L45	180	45	0	1	1
C182L47	182	47	0	1	1
C183L47	183	47	0	1	1
C184L47	184	47	0	1	1
C184L48	184	48	0	1	1
C185L48	185	48	0	1	1
C186L48	186	48	0	1	1
C186L49	186	49	0	1	1
C187L49	187	49	0	1	1
C188L49	188	49	0	1	1
C189L50	189	50	0	1	1

Registro: 1 de 2634

Modo folha de dados

NUM

Espaço Celular: Preenchimento de células



Consultas espaciais

The screenshot shows the TerraView 3.3.1 interface. On the left, the 'Bancos de Dados' (Data Sources) and 'Vistas/Temas' (Views/Themes) panels are visible. The 'Vistas/Temas' panel shows a tree structure with 'celula' selected, containing various layers like 'cel_limite_1000', 'PRODES_ALTO4_pol', 'EST_ALTO_lin', etc. The 'Cel_malaria_toca estrad' layer is checked. At the bottom, a data table is displayed with columns: 'object_id0', 'Col', 'Lin', 'malaria_ipa_total', 'Presenca_estrada', and 'Presenca_desmatamento2'. The first seven rows of the table are circled in red. A scale bar at the bottom indicates distances up to 90,000 meters.

Aproximadamente 59% da incidência de malária ocorre nas bordas de estradas

Alto risco – 60% do total nas bordas

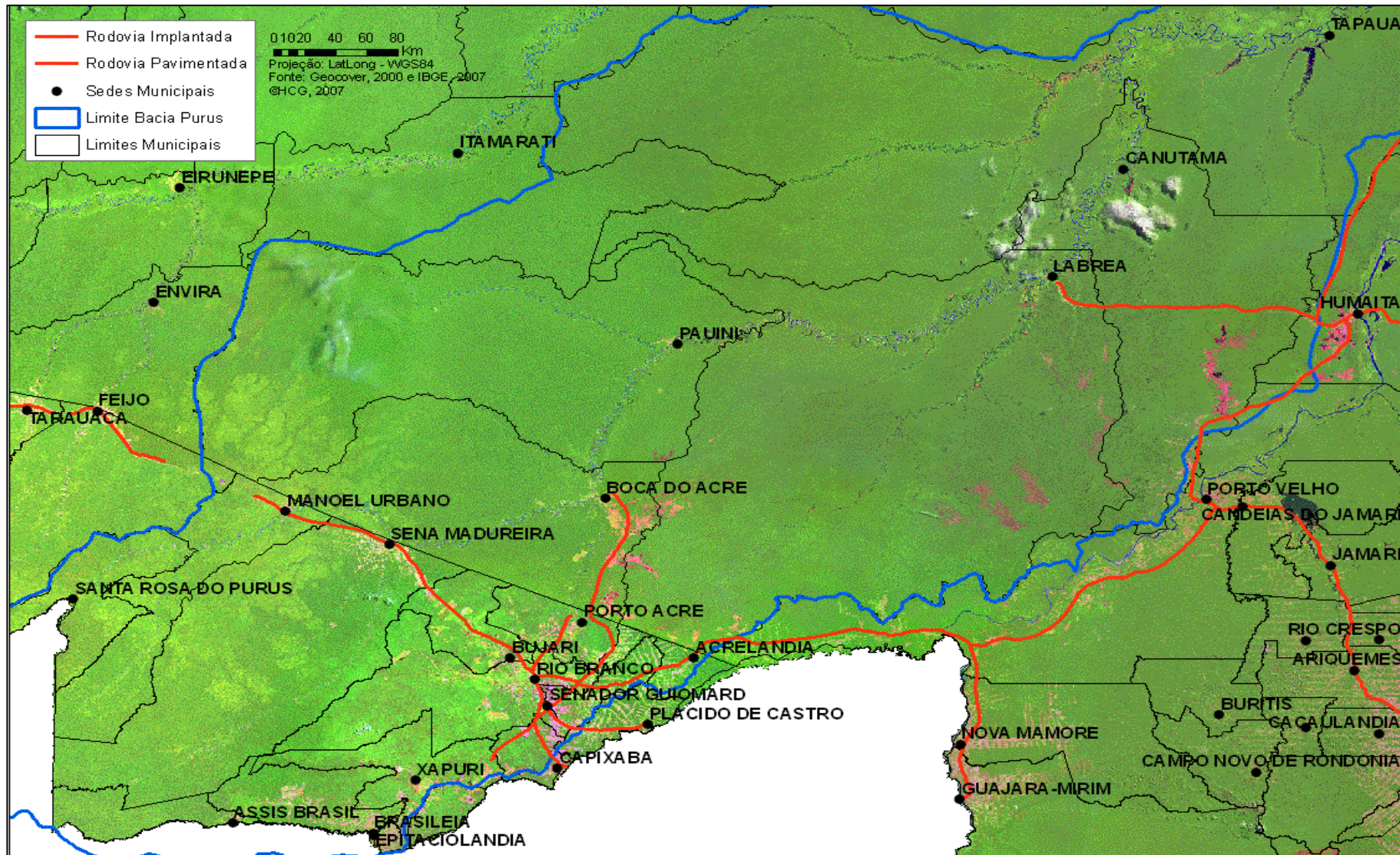
O que indica?

Relevante para estudo da dinâmica da doença

Concentração ações de controle

object_id0	Col	Lin	malaria_ipa_total	Presenca_estrada	Presenca_desmatamento2
C172L286	172	286	2	0	1
C195L57	195	57	2	0	1
C225L277	225	277	545	0	1
C263L291	263	291	1	1	1
C263L293	263	293	11	1	1
C267L76	267	76	2	0	1
C305L124	305	124	227	0	1

Rodovias alto Purus



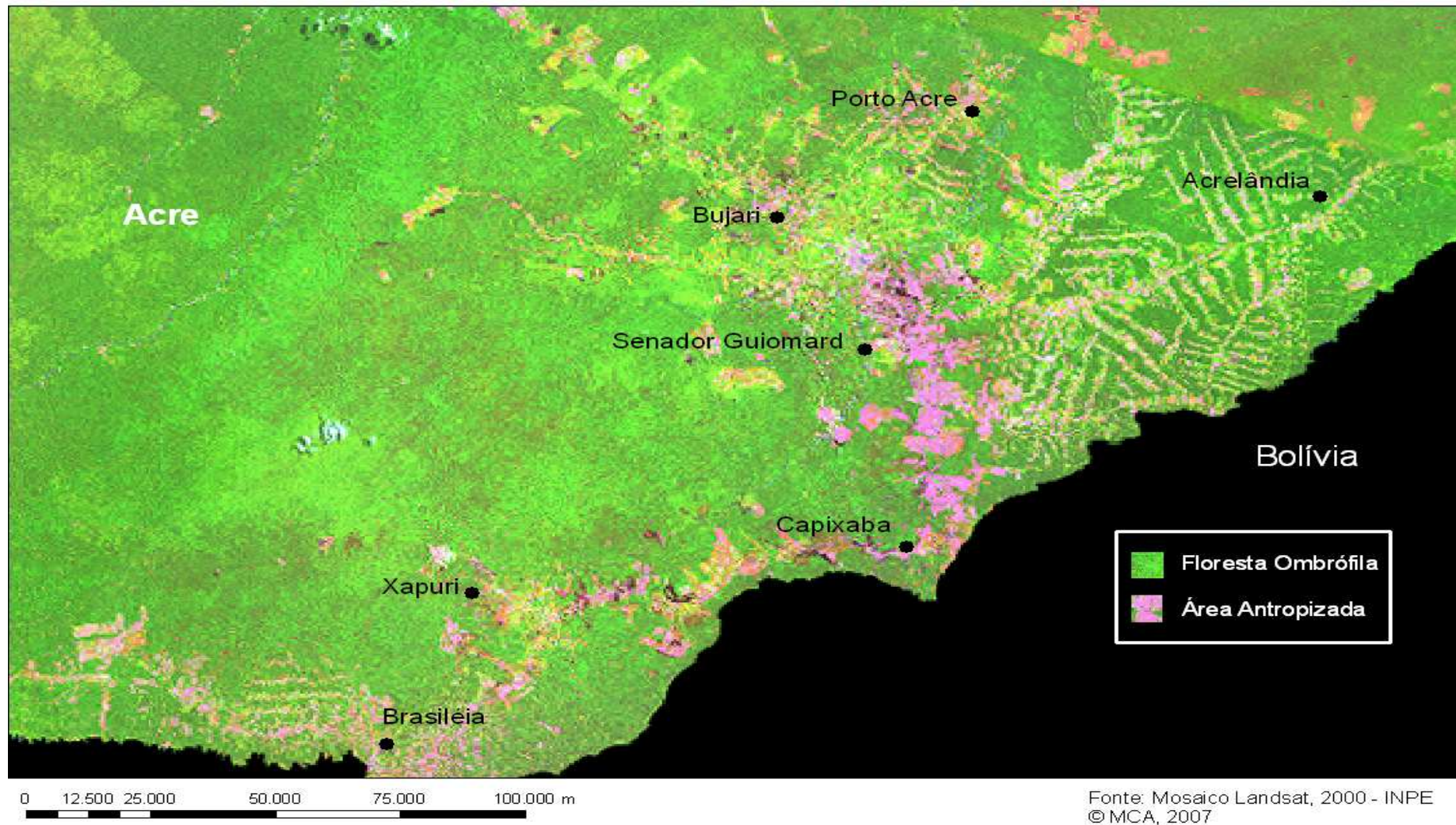
Consultas espaciais

Aproximadamente 92% da incidência da doença ocorre em áreas desmatadas

object_id0	Col	Lin	malaria_ipa_total	Presenca_estrada	Presenca_desmatamento2
C443L150	443	150	2833	0	1
C448L149	448	149	770	0	1
C459L160	459	160	2451	1	1
C462L155	462	155	15	0	1
C66L122	66	122	12	0	1
C100L87	100	87	0	0	1
C102L85	102	85	0	0	1

Long: -68:40:12.86 Lat: -7:00:51.74 x:-1633089.409 (Metros) y:-781469.051 (Metros)

Alto Purus



Obrigada,

mariane@dpi.inpe.br