



4ª Reunião da Sala de Crise da Região NORTE

Marcus Suassuna Santos

Sistemas de Alertas Hidrológicos

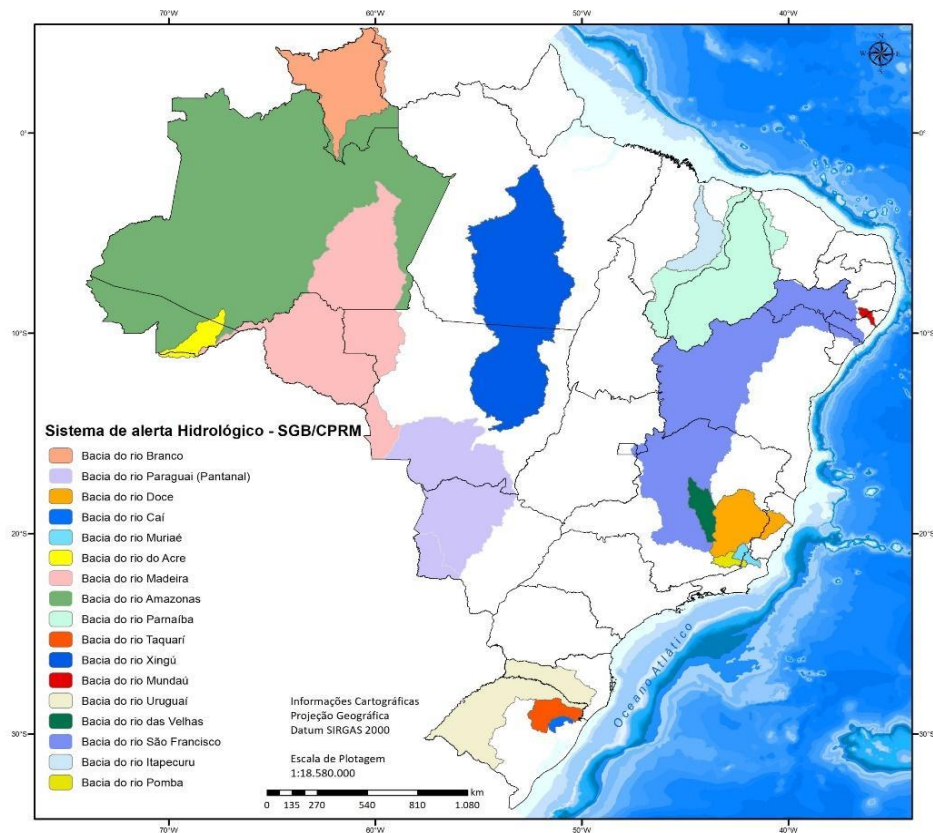
Serviço Geológico do Brasil - CPRM



MINISTÉRIO DE



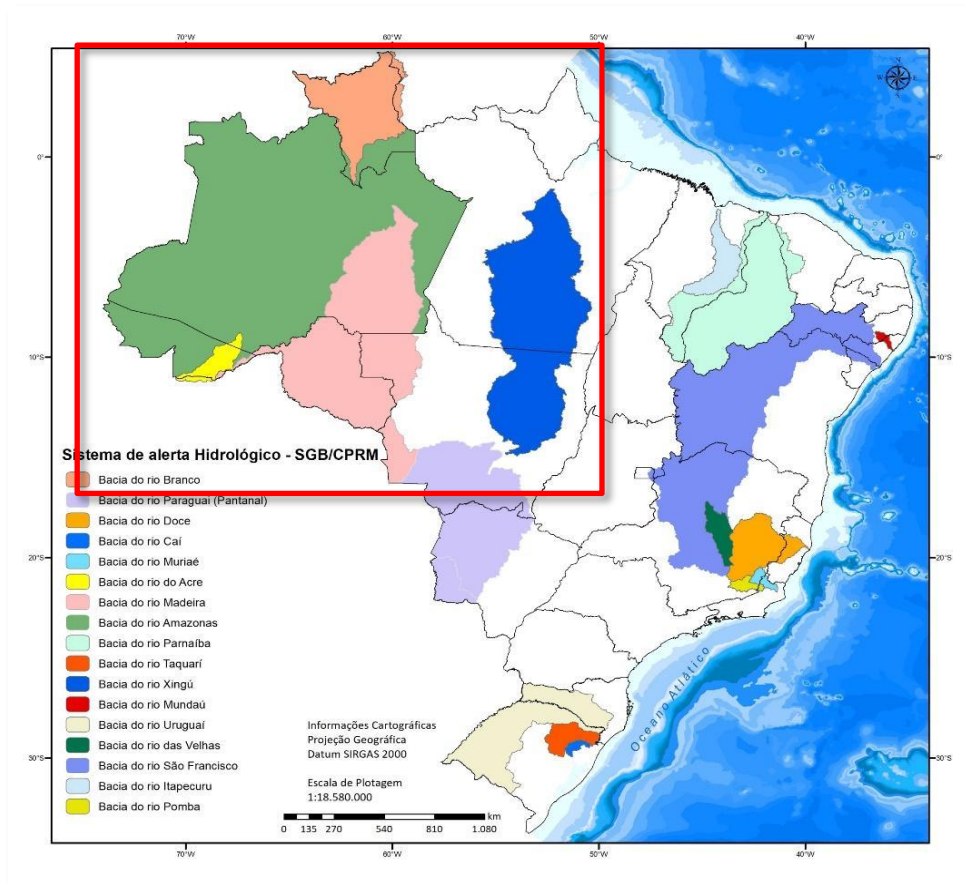
SISTEMA DE ALERTA HIDROLÓGICO



+ DE 7 MILHÕES DE PESSOAS
BENEFICIADAS

www.sgb.gov.br/sac

SISTEMA DE ALERTA HIDROLÓGICO



REGIÃO NORTE

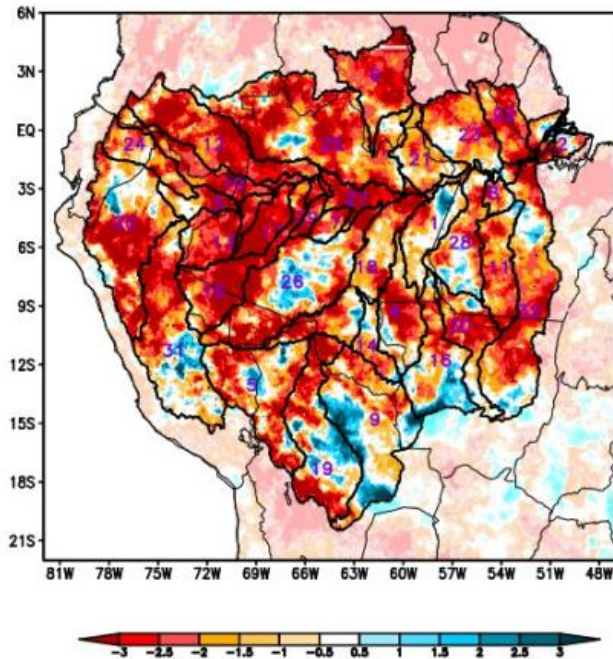
- SAH AMAZONAS
- SAH BRANCO
- SAH MADEIRA
- SAH ACRE
- SAH XINGU

Situação atual

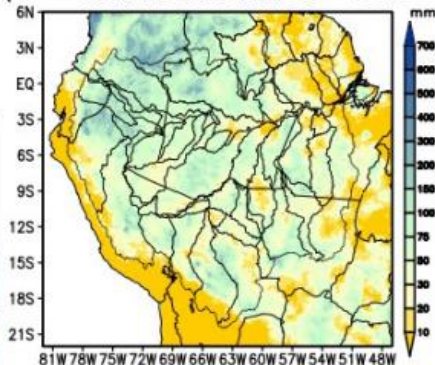
MONITORAMENTO BACIA AMAZÔNICA

ANOMALIA DE PRECIPITAÇÃO CATEGORIZADA

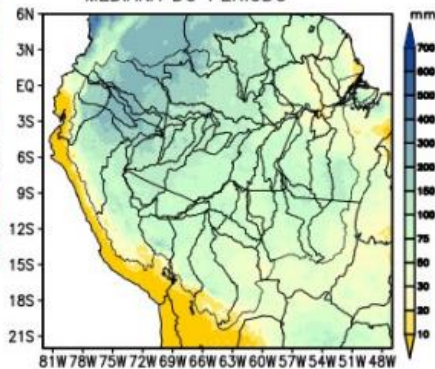
Período: 05/09/2023 – 04/10/2023



ACUMULADO DO PERÍODO – 2023



MEDIANA DO PERÍODO



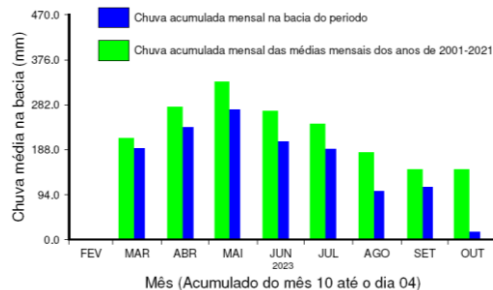
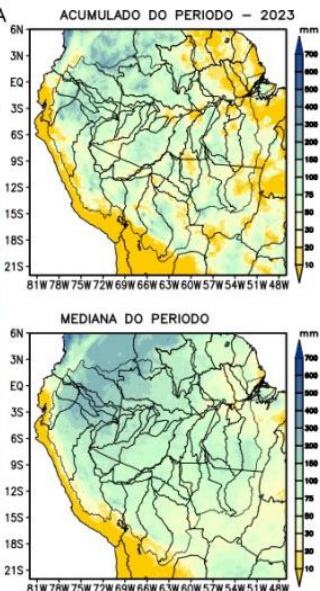
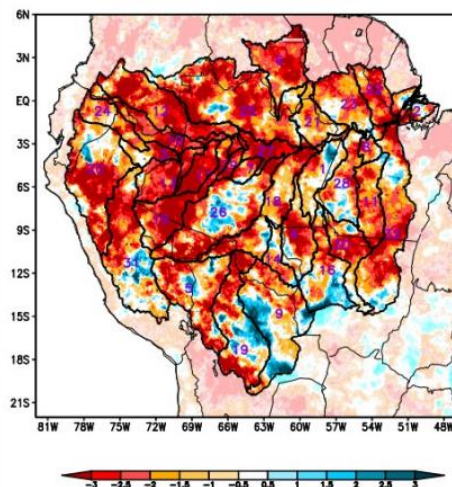
1	BH Aripuanã
2	BH Beni
3	BH Branco
4	BH Coari
5	BH Guaporé
6	BH Içá
7	BH Japurá
8	BH Javari
9	BH Ji-Paraná
10	BH Juruá
11	BH Jutai
12	BH Madeira
13	BH Mamoré
14	BH Marañon
15	BH Napo
16	BH Negro
17	BH Purus
18	BH Solimões
19	BH Tefé
20	BH Ucayali

MERGE/GPM - INPE/CPTec

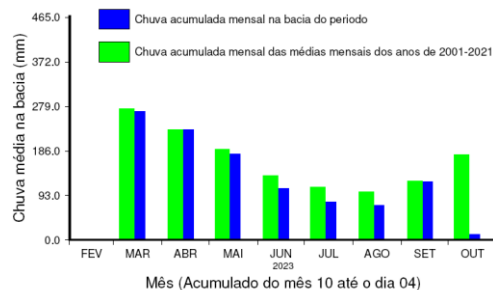
MONITORAMENTO BACIA AMAZÔNICA

ANOMALIA DE PRECIPITAÇÃO CATEGORIZADA

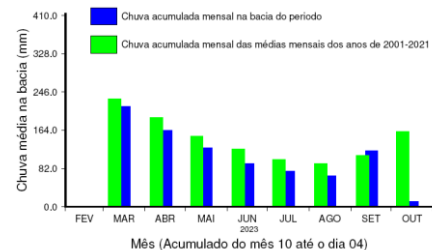
Período: 05/09/2023 - 04/10/2023



MANAUS
ANOMALIA ACUMULADA
MARÇO A SETEMBRO: ~ -350 mm



MANACAPURU



TABATINGA

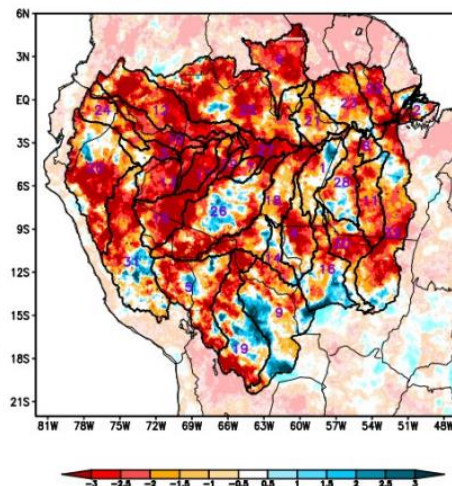
Fonte: Monitoramento Climático Grandes Bacias Hidrográficas CODAM/INPA ISSN 2965-0291

MERGE/GPM - INPE/CPTEC

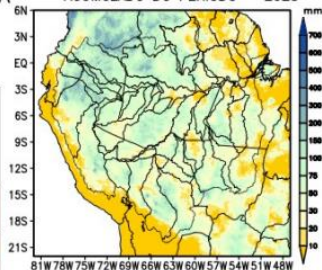
MONITORAMENTO BACIA AMAZÔNICA

ANOMALIA DE PRECIPITAÇÃO CATEGORIZADA

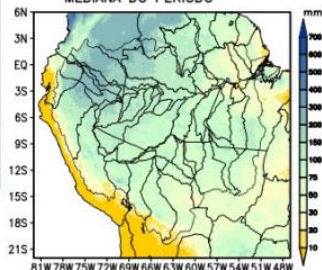
Período: 05/09/2023 – 04/10/2023



ACUMULADO DO PERÍODO – 2023

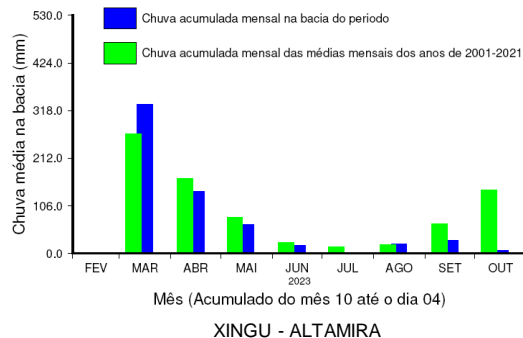
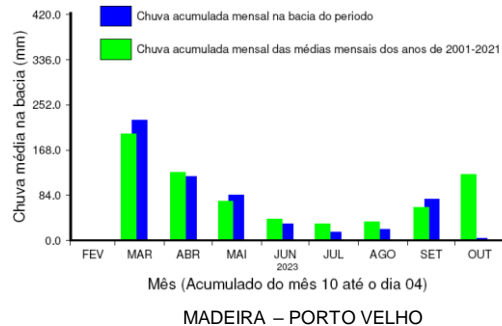


MEDIANA DO PERÍODO

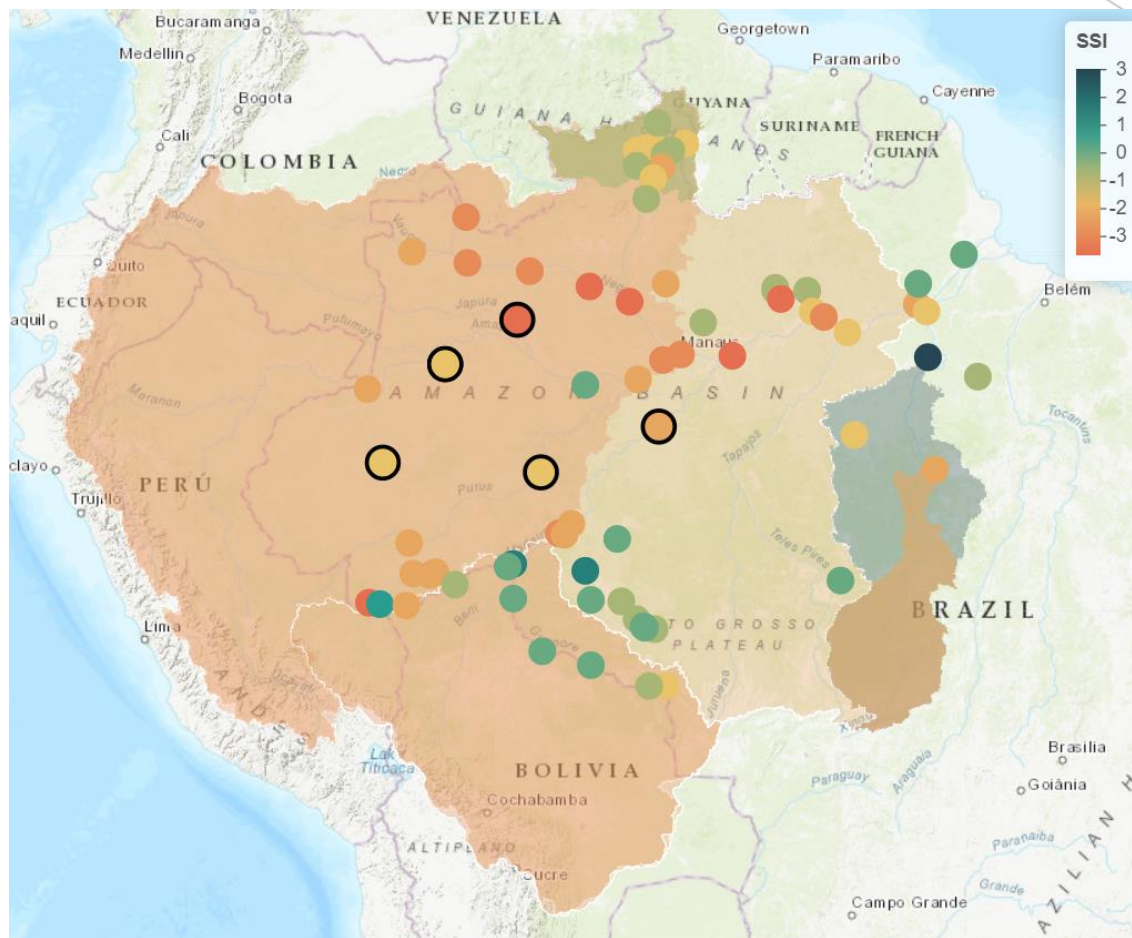


Fonte: Monitoramento Climático Grandes Bacias Hidrográficas CODAM/INPA ISSN 2965-0291

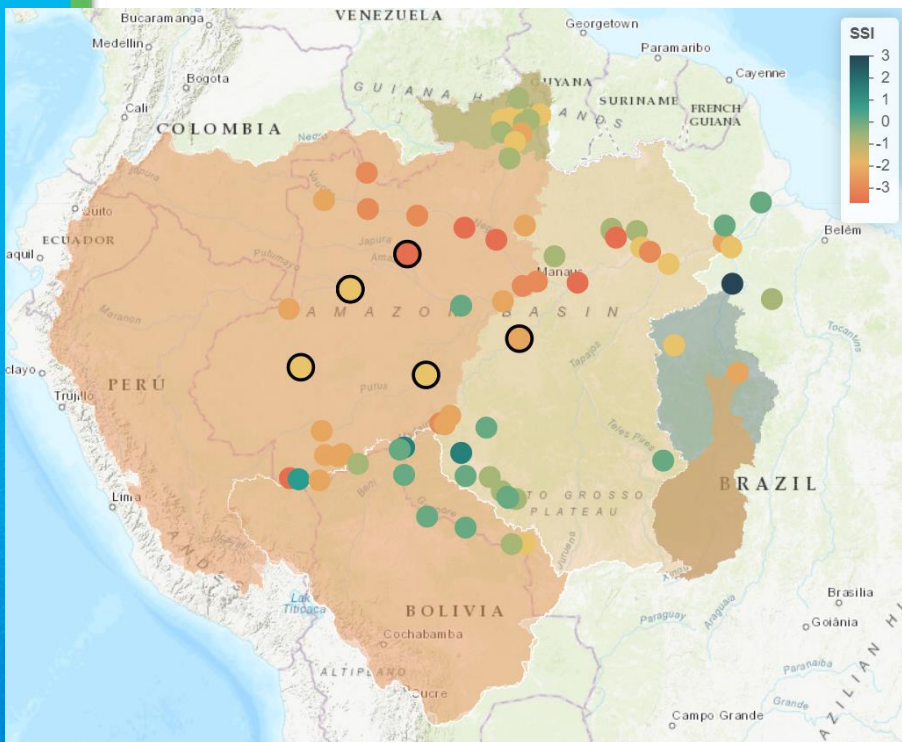
MERGE/GPM - INPE/CPTEC



MONITORAMENTO BACIA AMAZÔNICA



MONITORAMENTO BACIA AMAZÔNICA



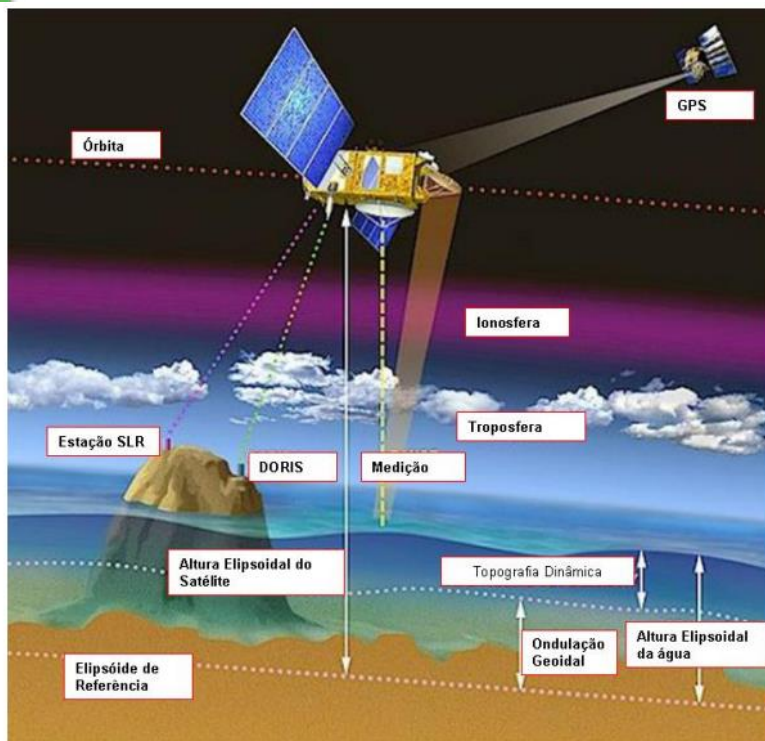
Em alguns pontos foram incluídos dados obtidos por meio de altimetria satelital

As informações são produtos de projeto de pesquisa, que estimam a precisão dos dados em torno de 20 cm. Trata-se de um produto oriundo de pesquisa que não substitui dados de estações hidrológicas instaladas na bacia.

Contudo, são indicativos e estimativas do nível de água, especialmente em locais pouco ou não monitorados (Japurá, Juruá, Javari, Purus, etc.).

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

MONITORAMENTO BACIA AMAZÔNICA



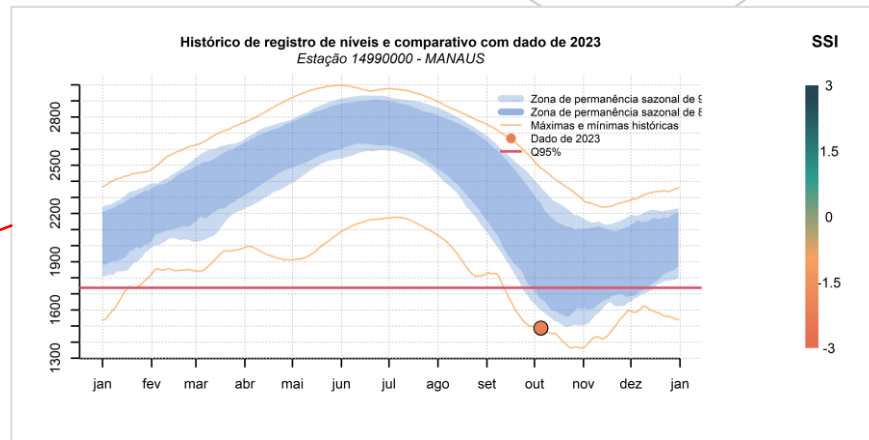
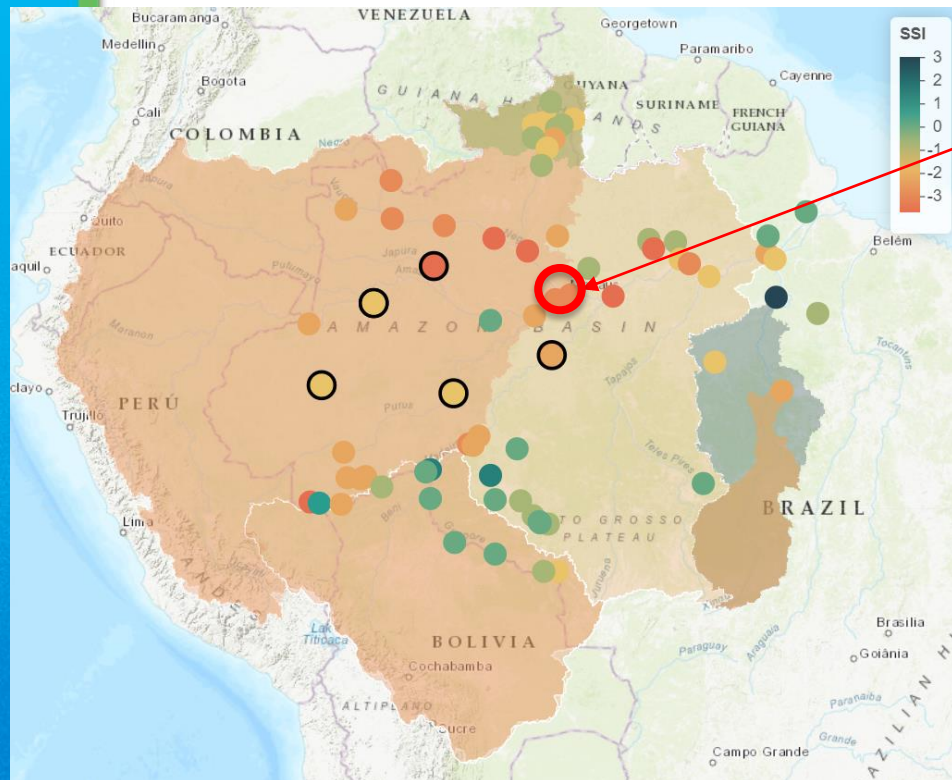
Em alguns pontos foram incluídos dados obtidos por meio de altimetria satelital

GPS: Global Positioning System

SLR: Satellite Laser Ranging

DORIS - Doppler Orbitography and Radiopositioning Integrated by Satellite

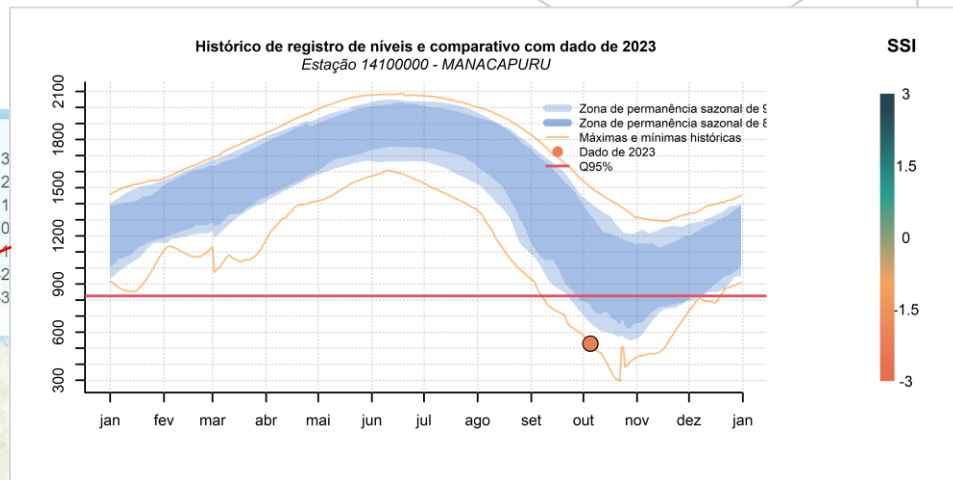
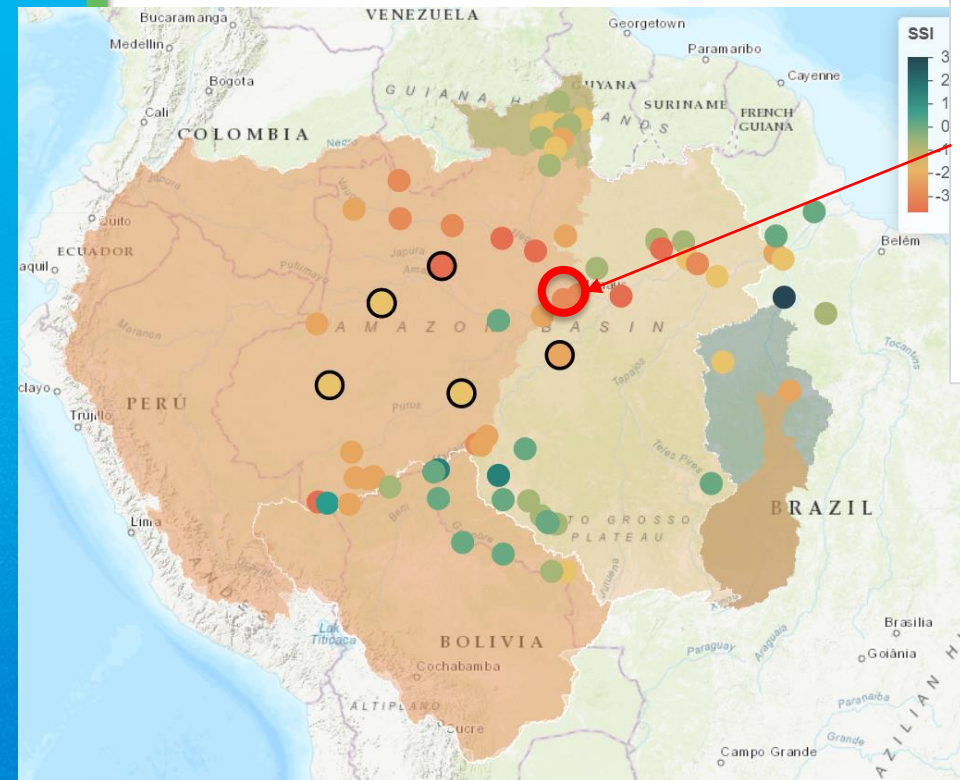
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
24/10/2010	1364
30/10/1963	1364
13/11/1906	1420
04/11/1997	1434
17/10/1916	1442
12/10/1926	1454
18/10/1958	1474
25/10/2005	1475
29/09/1936	1497
30/10/1998	1503

Cota atual (04/10/2023)	1490 cm
SSI	-2.3

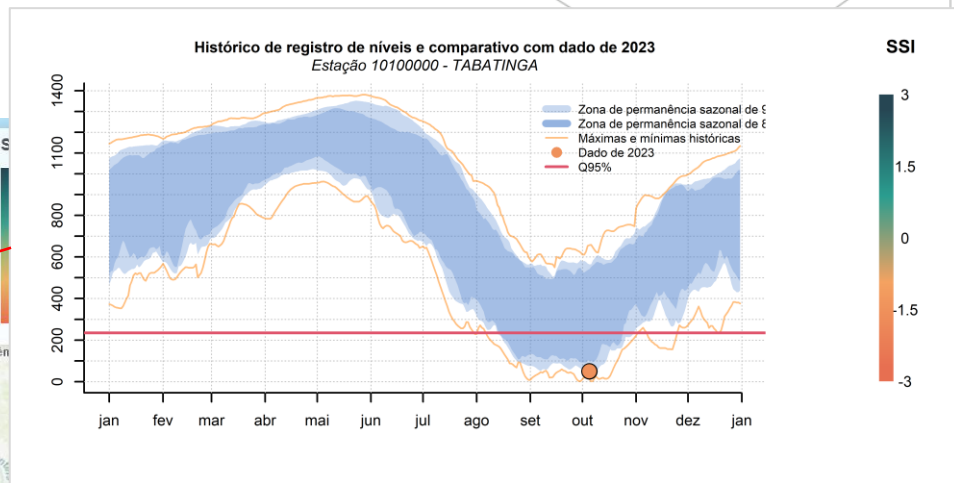
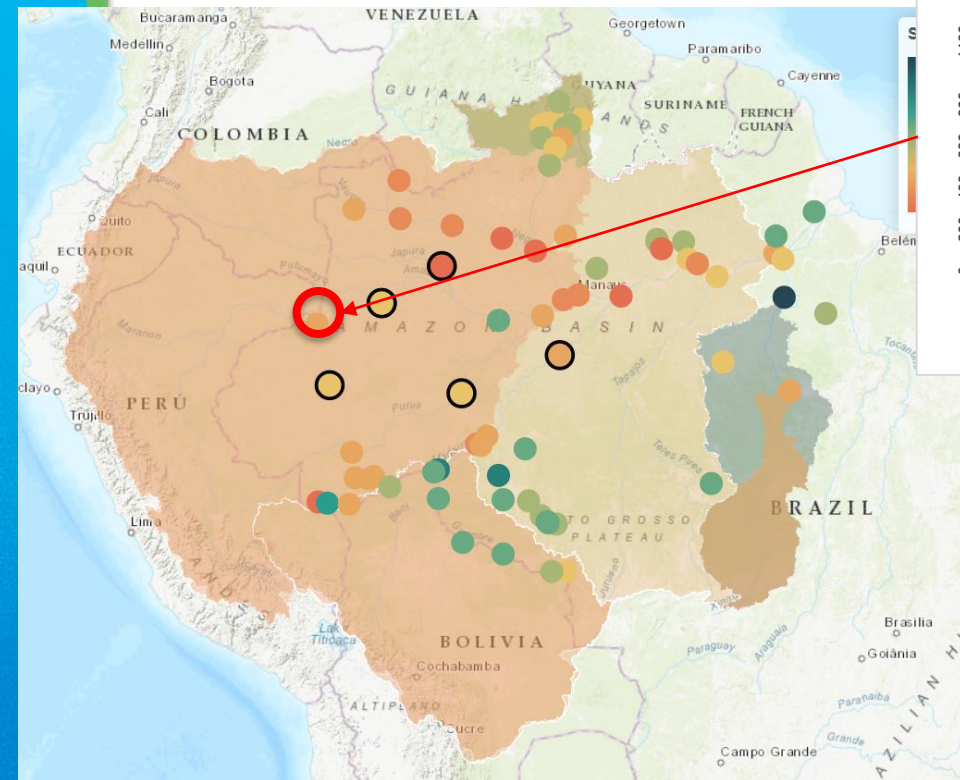
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
22/10/2010	295
04/11/1997	495
21/10/2005	508
29/10/1995	552
27/10/1998	557
26/10/2022	651
03/11/1991	667
27/10/1990	670
27/10/2015	691
04/10/2011	698

Cota atual (04/10/2023)	527 cm
SSI	-2.6

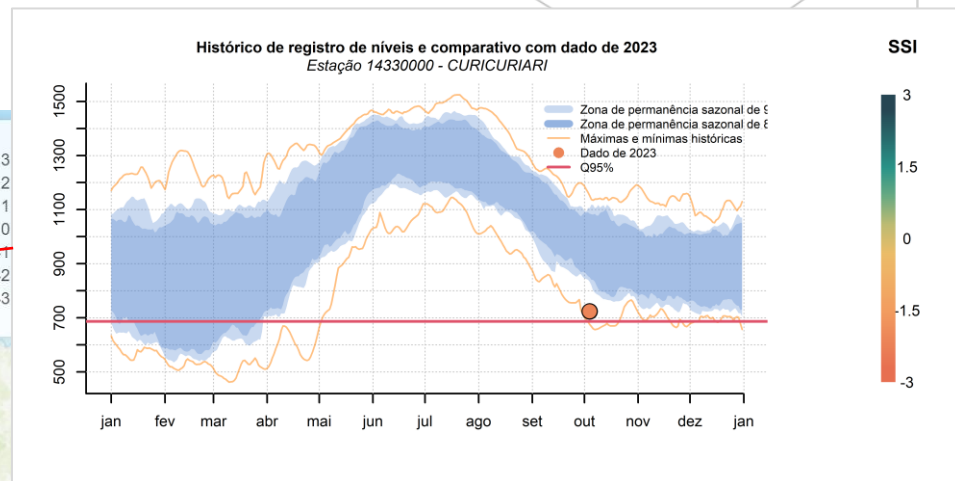
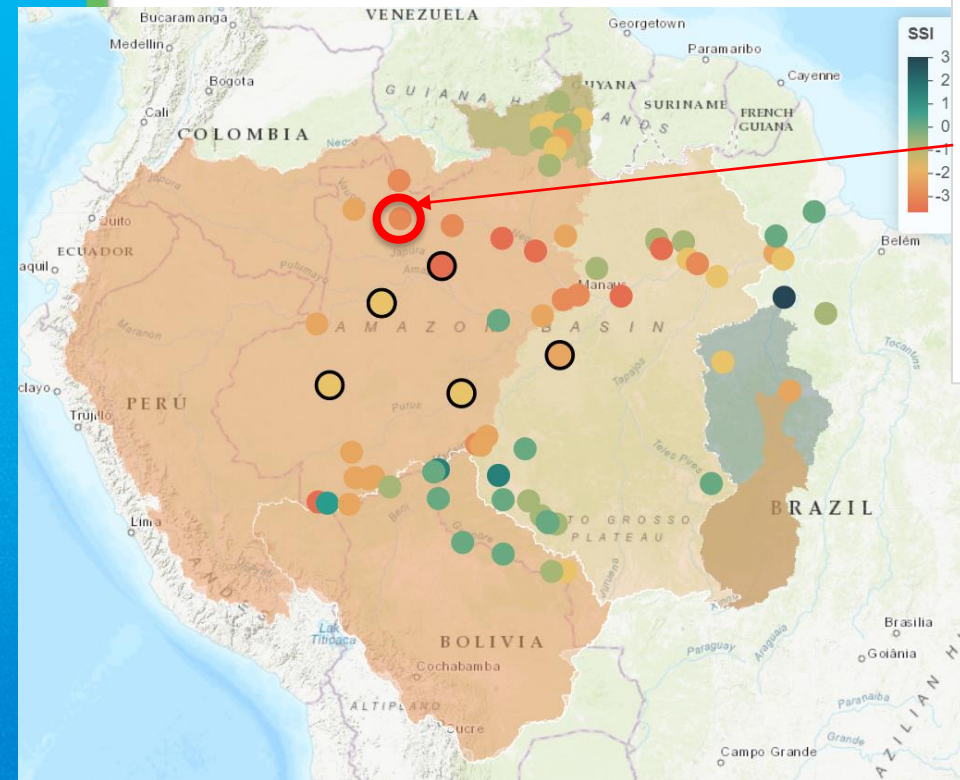
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
06/10/2022	1,5
29/09/2005	2
11/10/1998	13
08/09/1995	43
09/09/1988	60
24/08/2017	68
01/10/2018	94
22/09/1999	113
25/09/2020	125
24/08/1983	136

Cota atual (29/09/2023)	24 cm
SSI	-2.6

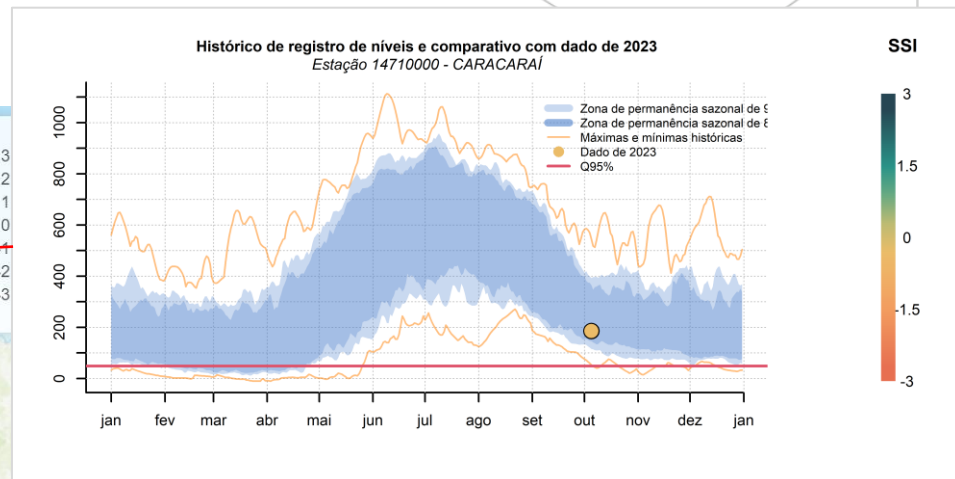
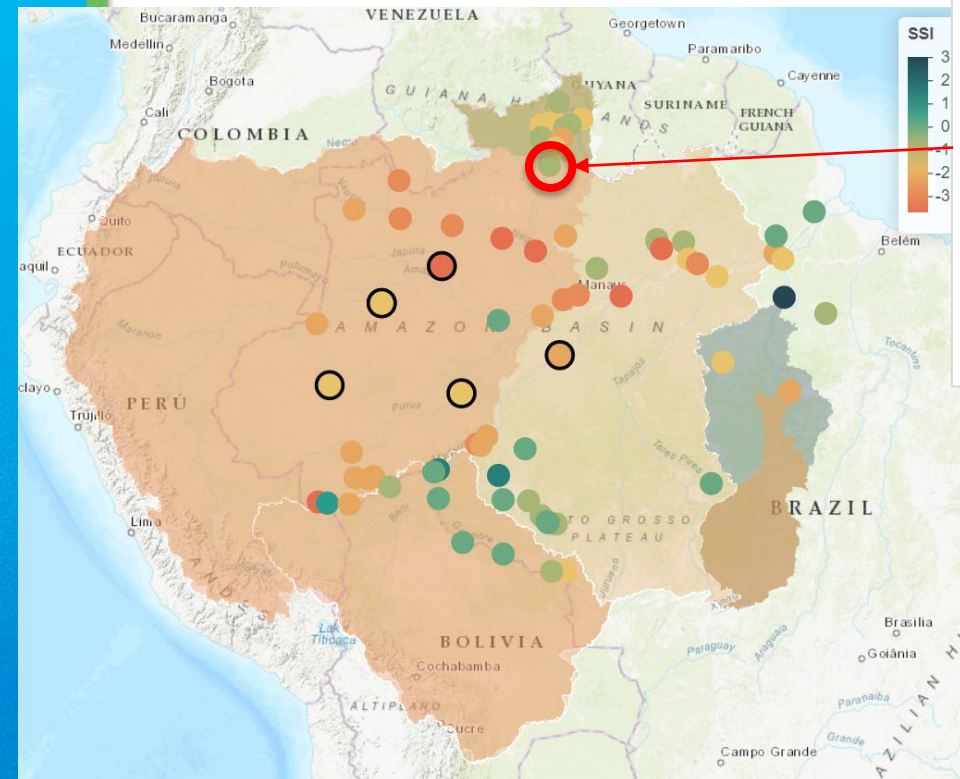
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
09/03/1980	462
09/02/1992	506
30/03/1988	510
28/02/2007	525
05/02/1983	527
22/03/2018	528
07/02/2004	531
10/02/2016	533
22/02/1979	535
24/04/1985	542

Cota atual (04/10/2023)	716 cm
SSI	-2.5

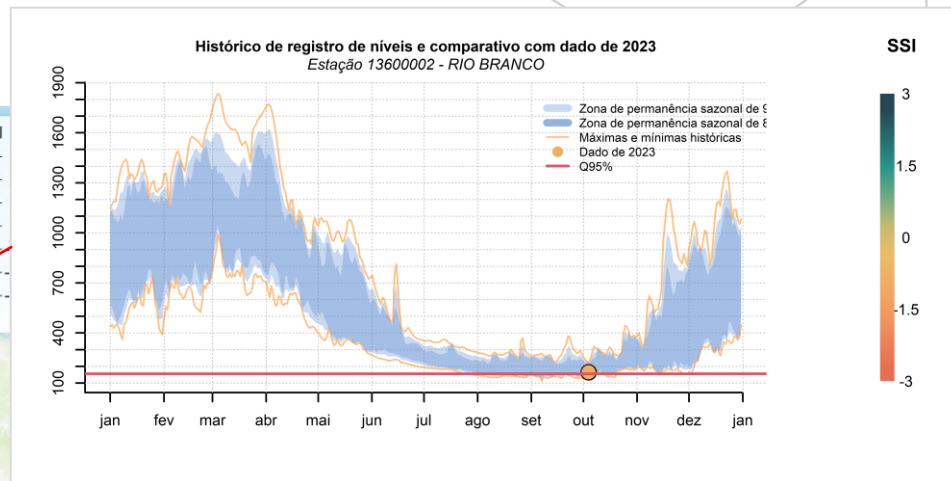
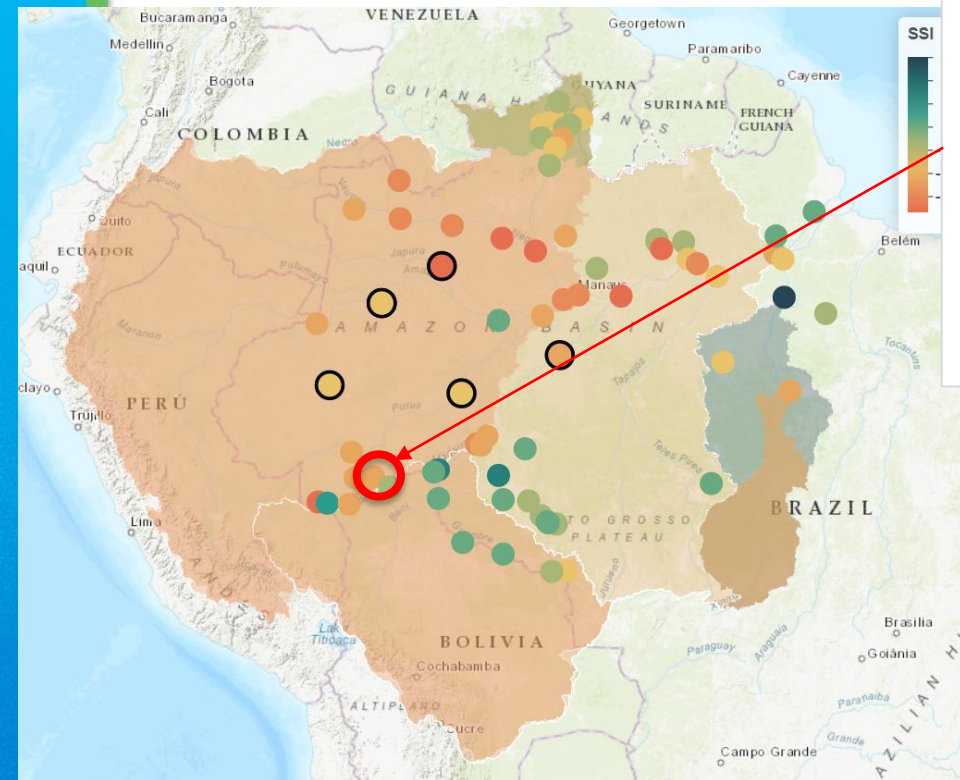
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
24/03/1998	-10
04/05/1988	-3
16/02/2016	-1
28/02/1983	6
08/03/1978	10
17/03/1980	10
17/04/1987	12
04/03/1979	13
01/03/1995	18
25/03/1973	19

Cota atual (04/10/2023)	184 cm
SSI	-0,75

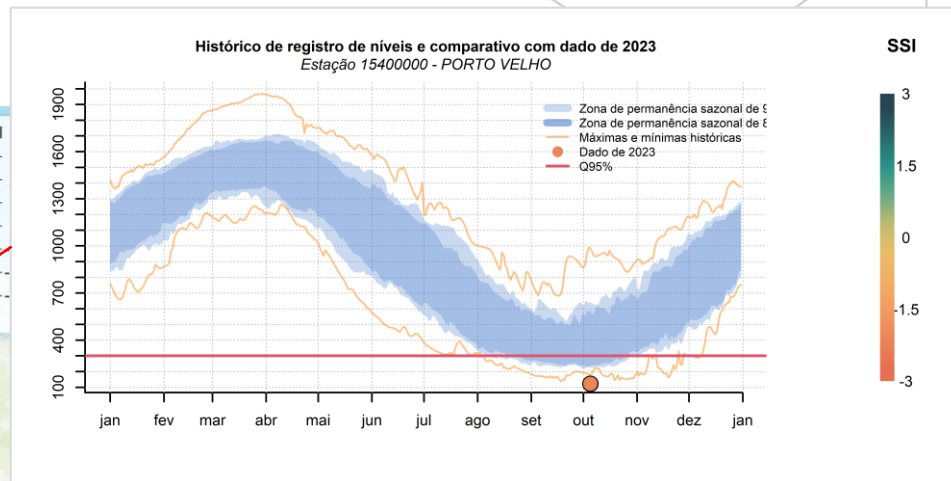
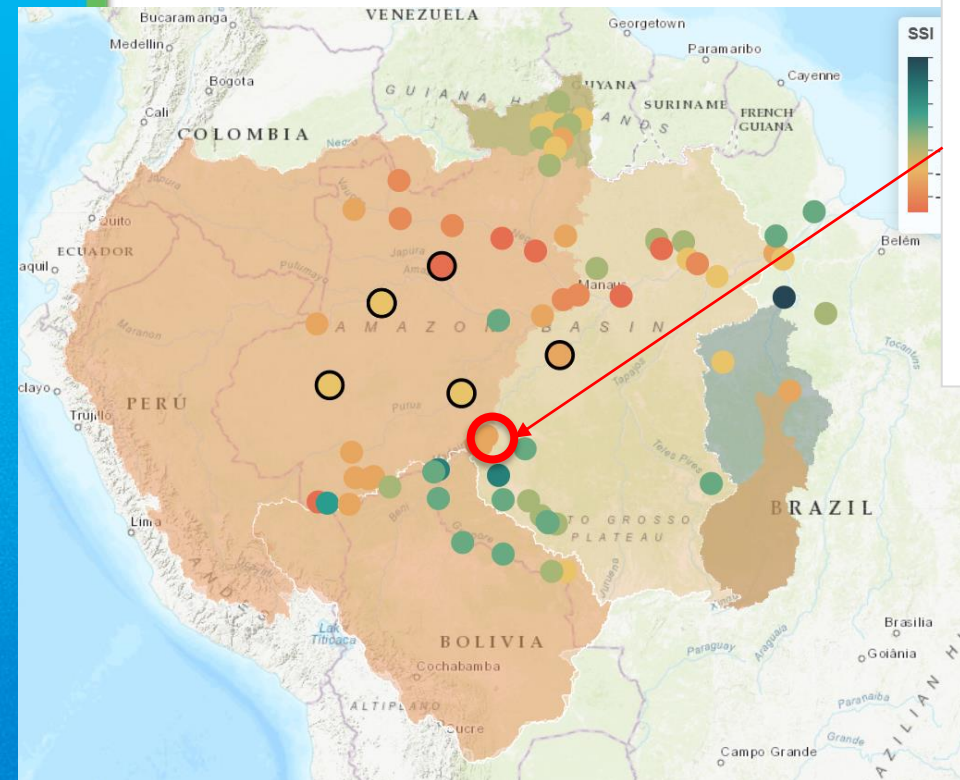
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
07/09/2017	112
01/10/2022	126
17/09/2016	129
28/08/2021	134
18/10/2020	134
26/08/2019	152
03/10/2018	166
01/11/2015	188
05/09/2014	205
22/05/2023	343

Cota atual (04/10/2023)	164 cm
SSI	-2,1

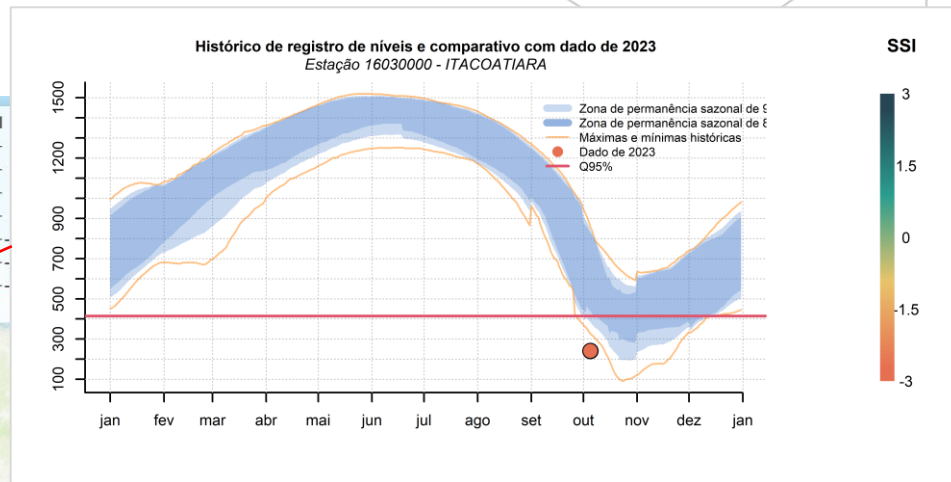
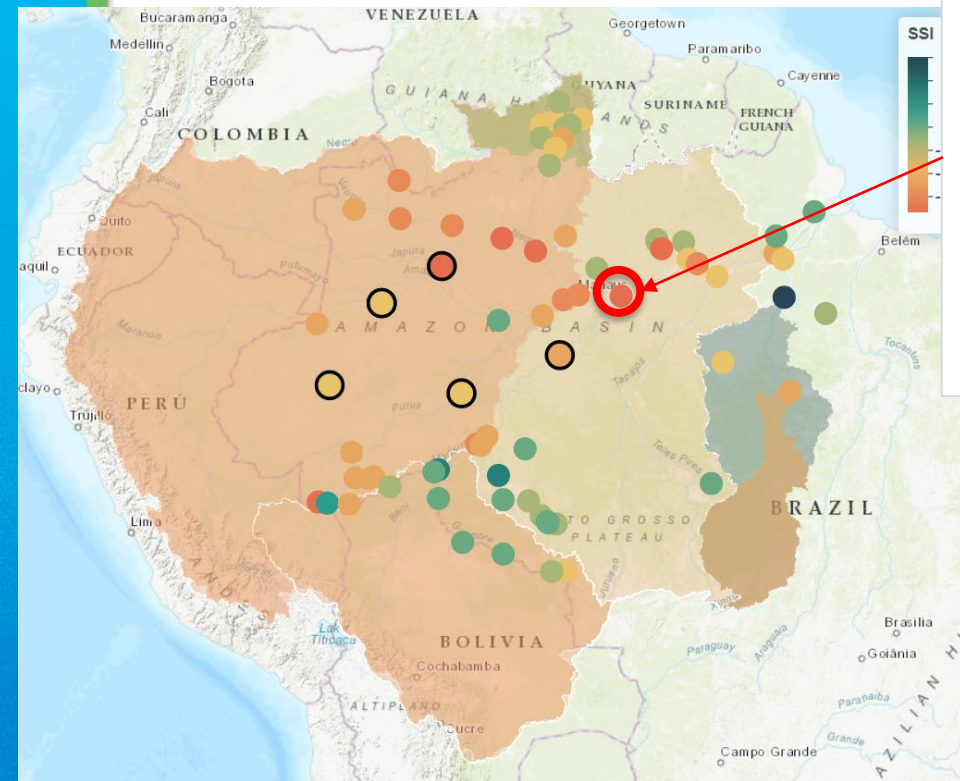
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
18/09/2022	140
18/10/2020	146
10/09/2005	163
15/10/2021	167
01/11/2013	200
21/10/2017	210
31/08/2023	212
18/08/1968	214
01/10/1971	216
26/08/2016	217

Cota atual (04/10/2023)	122 cm
SSI	-2.6

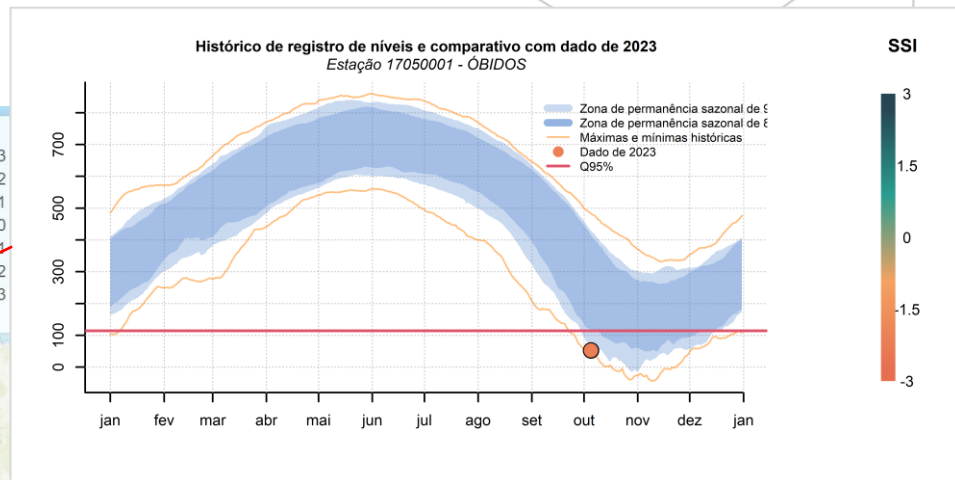
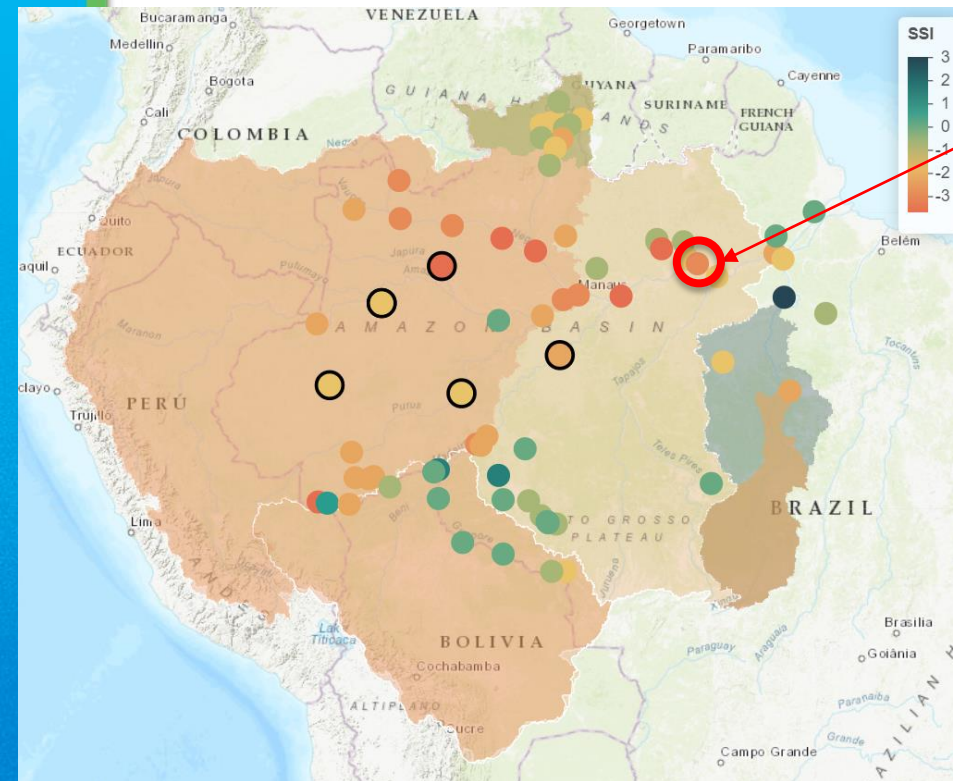
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
24/10/2010	91
30/10/2015	325
01/12/2012	332
28/10/2022	336
08/11/2020	347
04/11/2018	390
21/11/2011	415
12/12/2016	422
09/10/2017	432
26/10/2019	500

Cota atual (04/10/2023)	240 cm
SSSI	-2,9

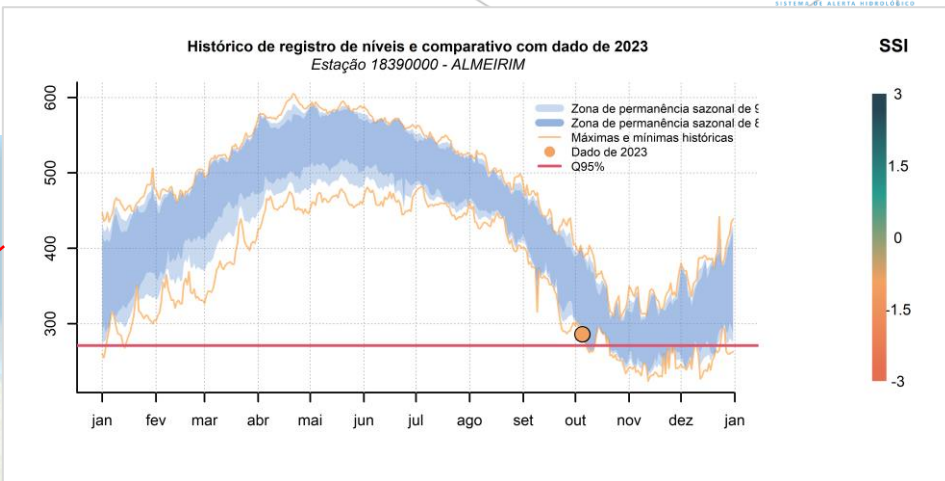
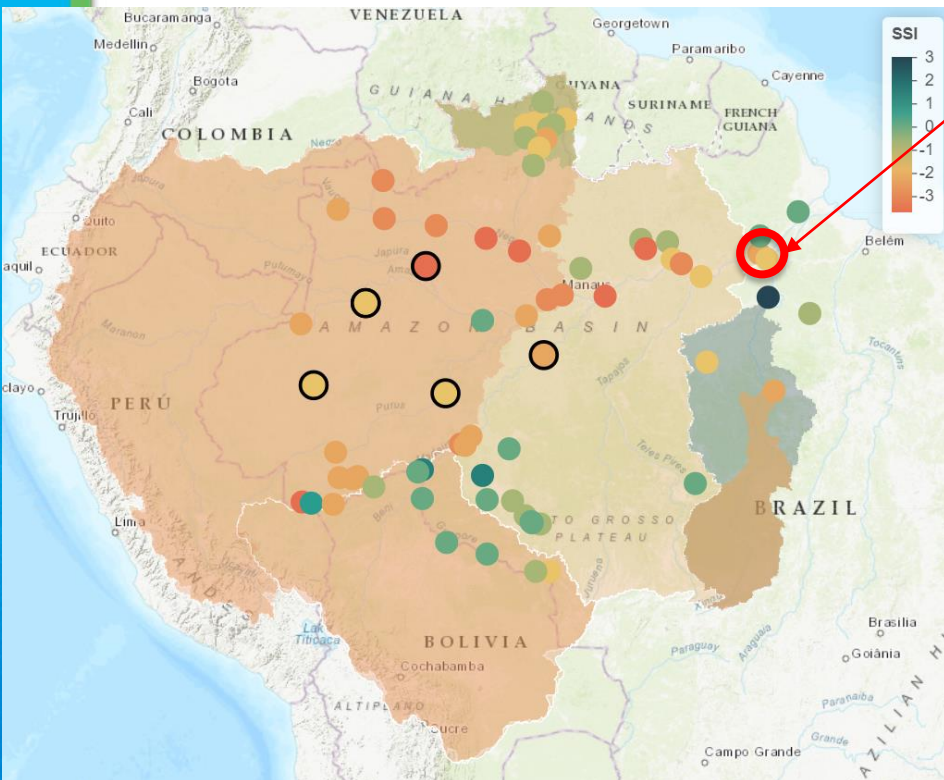
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
09/11/1997	-44
27/10/2005	-39
28/10/1995	-22
31/10/1998	-18
15/10/2010	3
16/11/1991	36
30/10/1990	42
26/11/2012	46
07/11/2015	46
30/11/2009	56

Cota atual (04/10/2023)	51 cm
SSI	-2,4

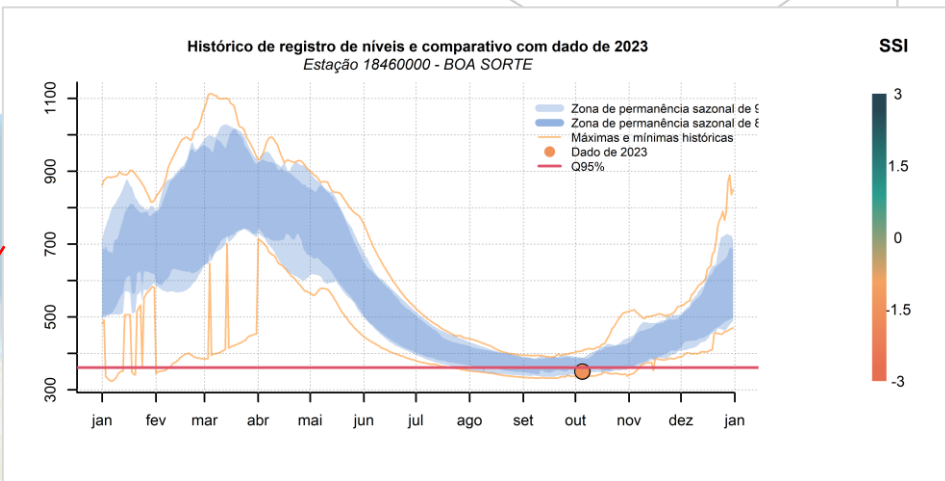
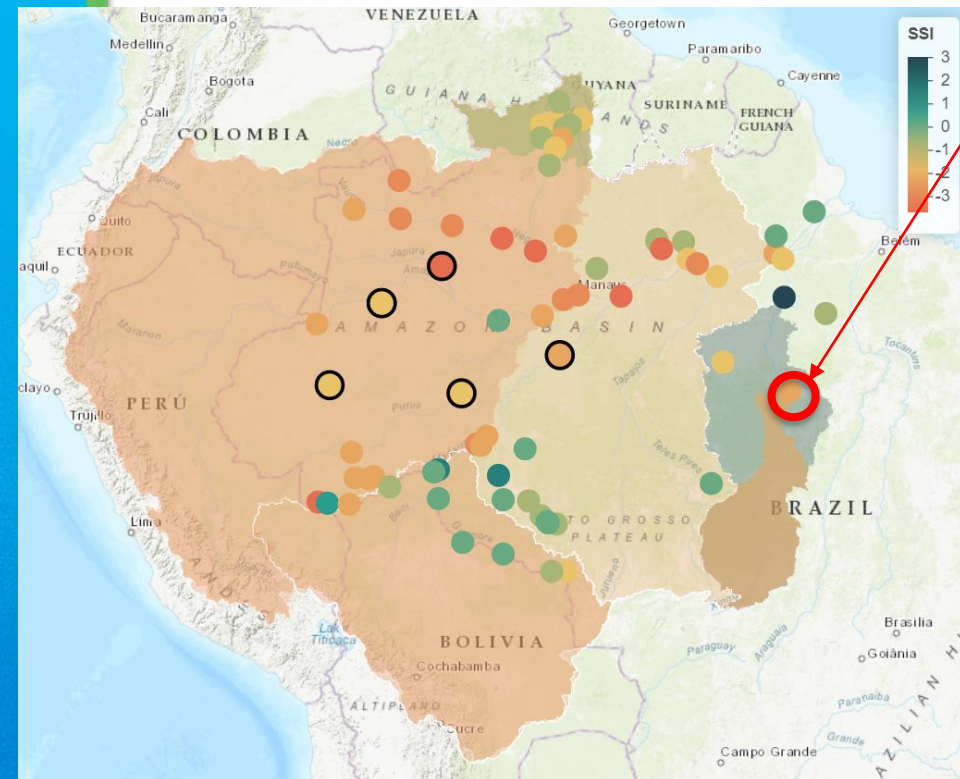
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
12/11/2015	224
07/11/2020	231
22/11/2018	234
09/11/2022	247
25/10/2017	252
02/01/2016	255
17/10/2019	286
08/11/2021	295
08/01/2023	314

Cota atual (04/10/2023)	250 cm
SSI	-1,4

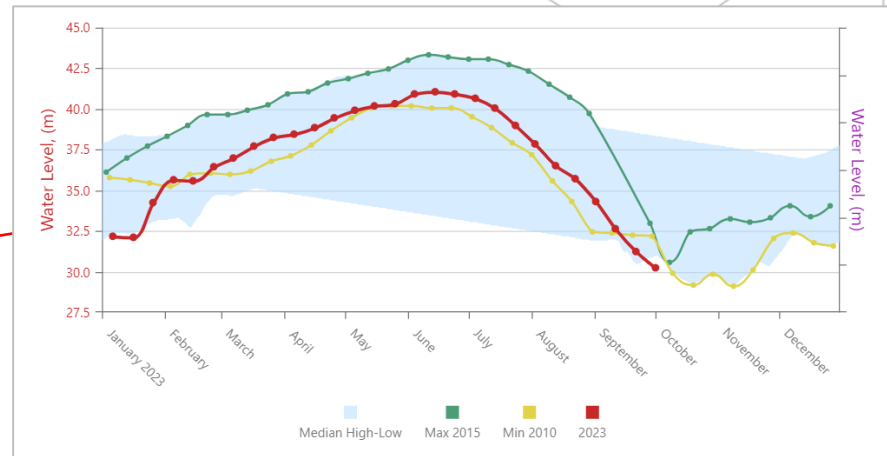
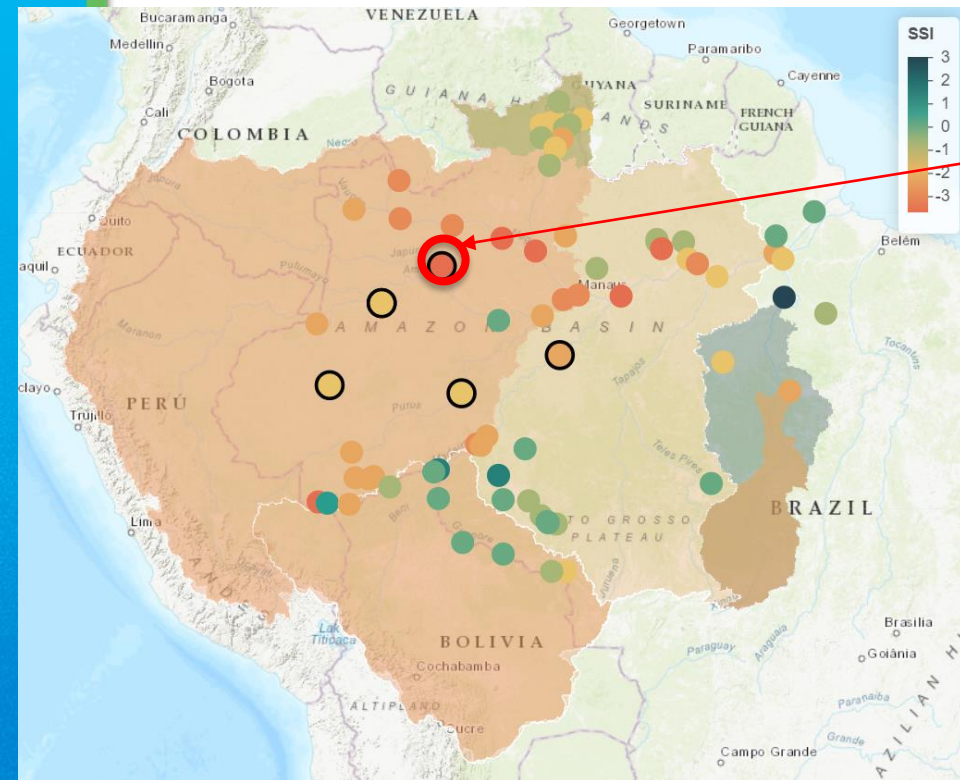
MONITORAMENTO BACIA AMAZÔNICA



Data	Cota
06/01/1989	324
08/09/1999	332
13/09/1998	336
08/09/2000	343
16/10/2002	347
09/08/1994	349
15/09/1977	350
15/11/1991	353
25/09/1987	355
01/10/1988	356

Cota atual (04/10/2023)	350 cm
SSI	-1,5

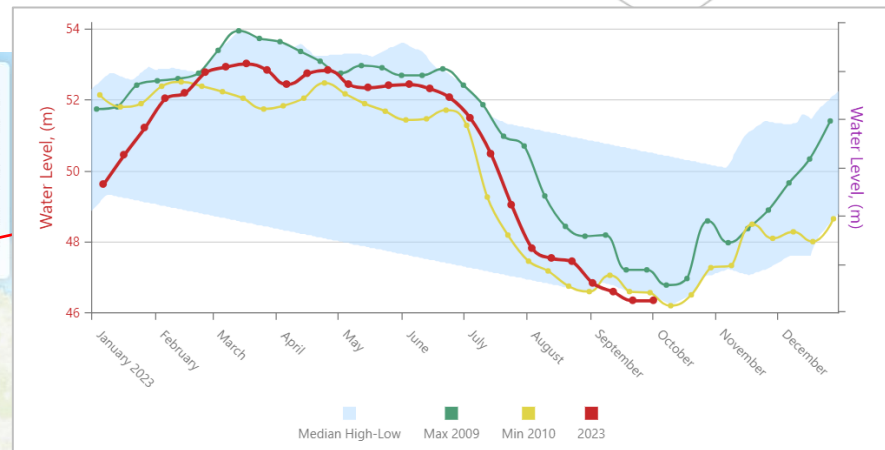
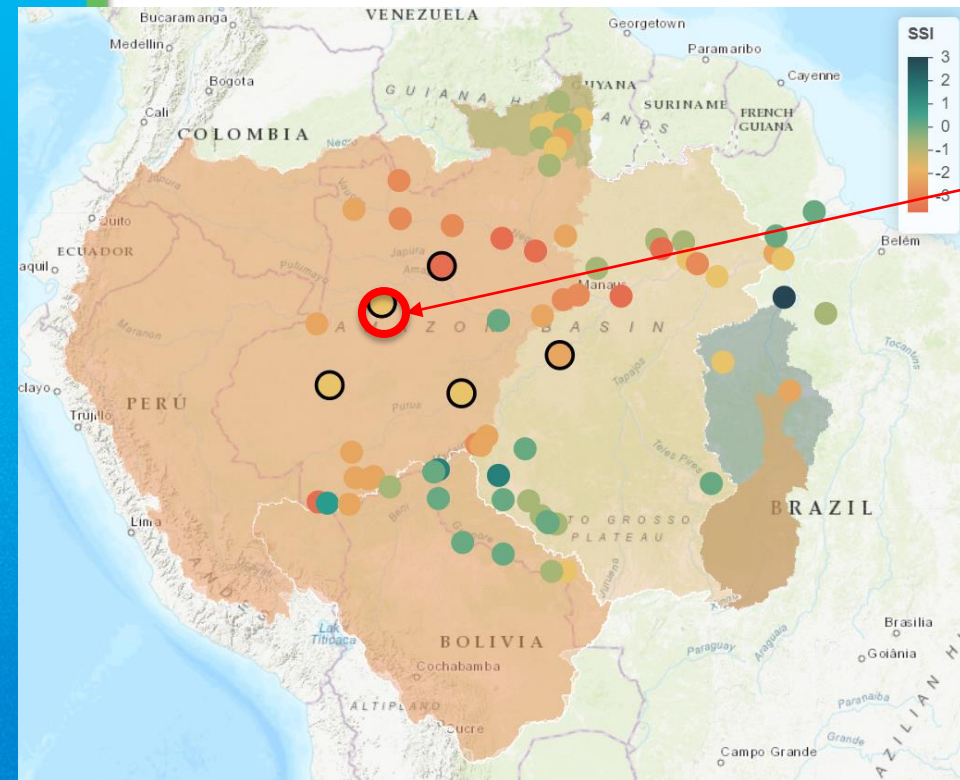
MONITORAMENTO BACIA AMAZÔNICA



Cota mínima (08/11/2010)	29,14 cm
Cota atual (30/09/2023)	30,25 cm
SSI	-3

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

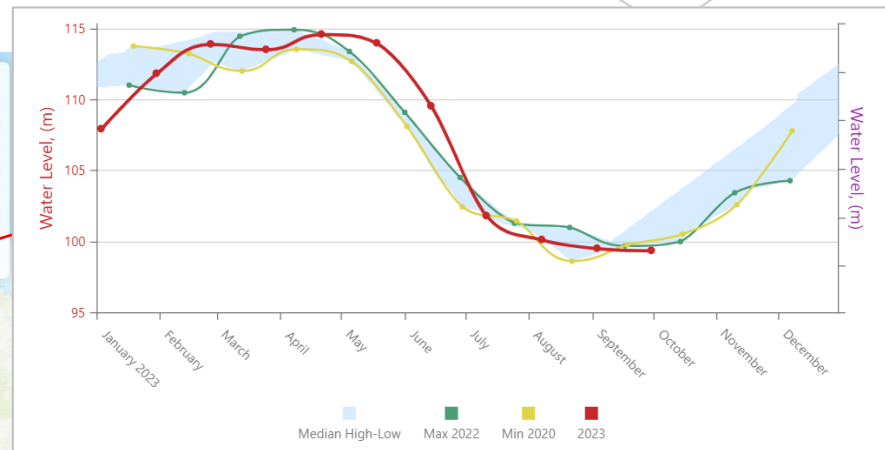
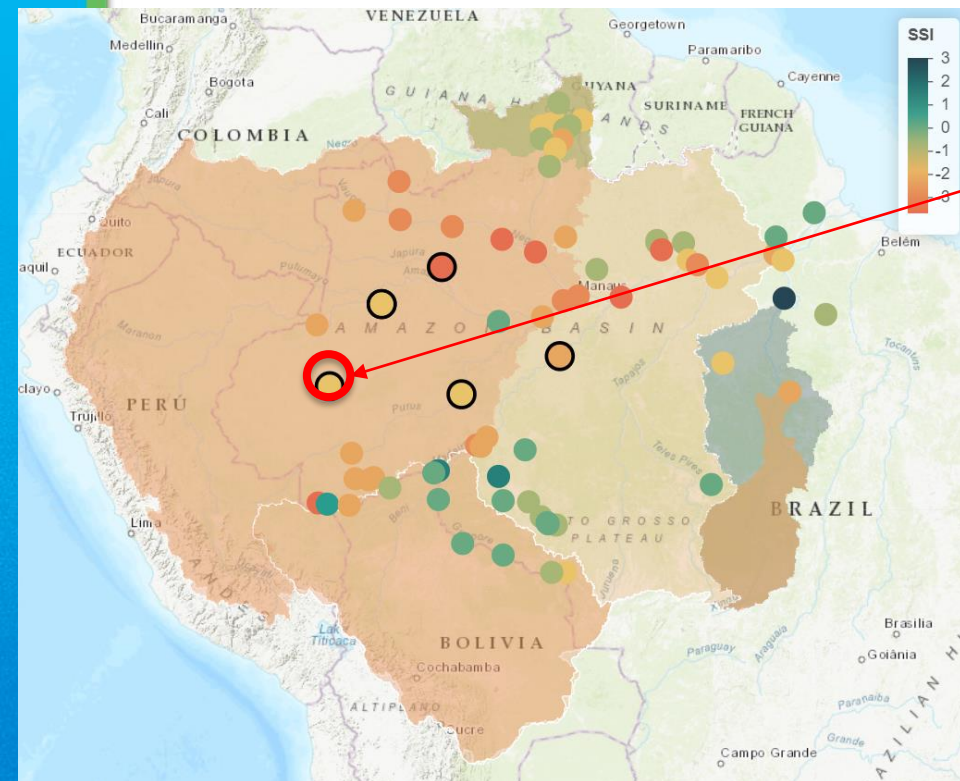
MONITORAMENTO BACIA AMAZÔNICA



Cota mínima (01/10/2022)	45,73 cm
Cota atual (30/09/2023)	45,73 cm
SSI	-1,3

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

MONITORAMENTO BACIA AMAZÔNICA



Cota mínima (22/08/2010)

98,61 cm

Cota atual (29/09/2023)

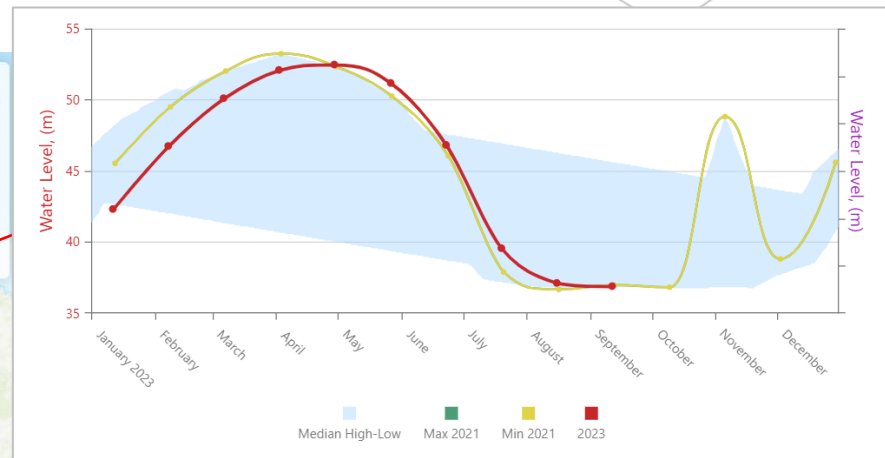
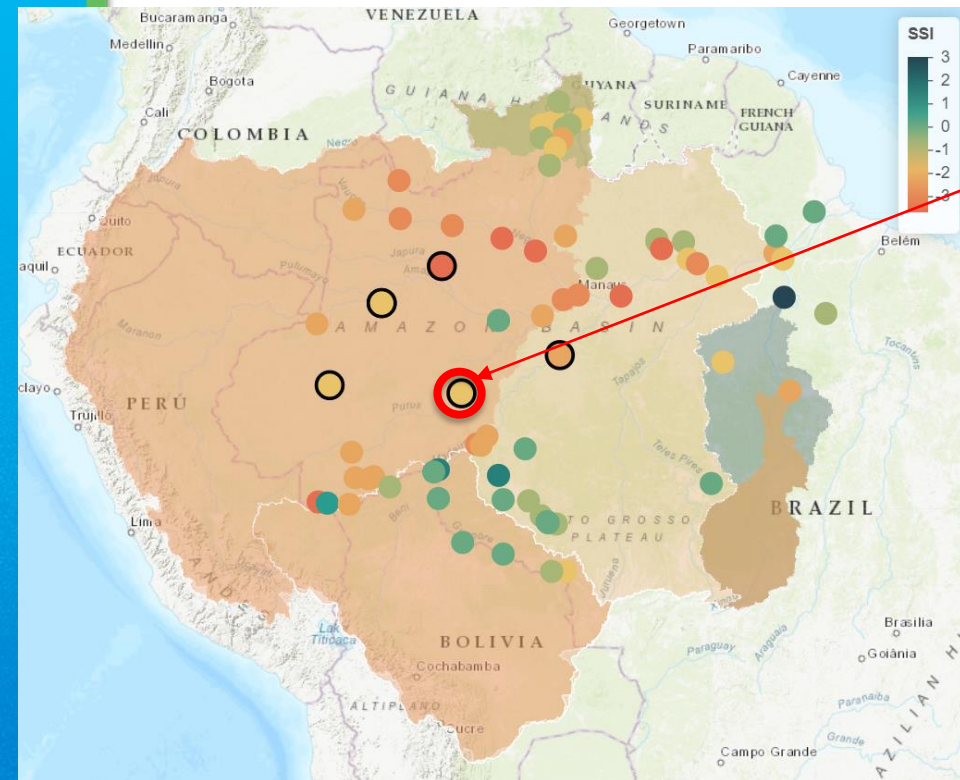
99,39 cm

SSI

-1,3

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

MONITORAMENTO BACIA AMAZÔNICA



Cota mínima (16/08/2021)

36,68 cm

Cota atual (10/09/2023)

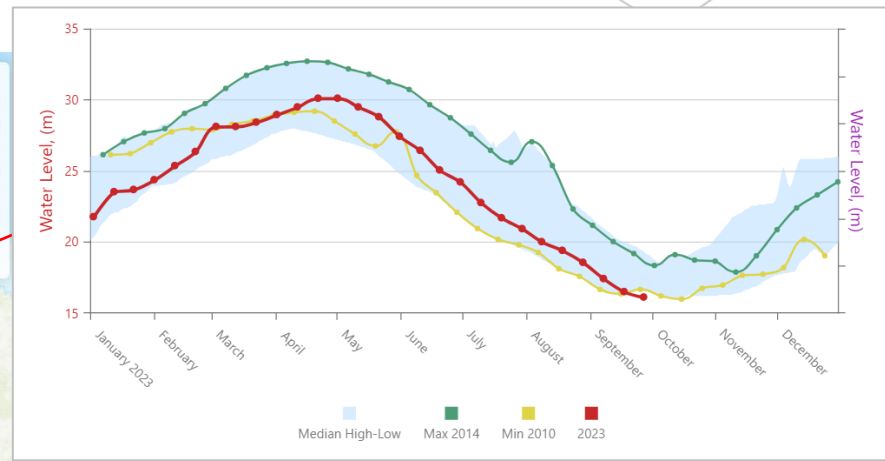
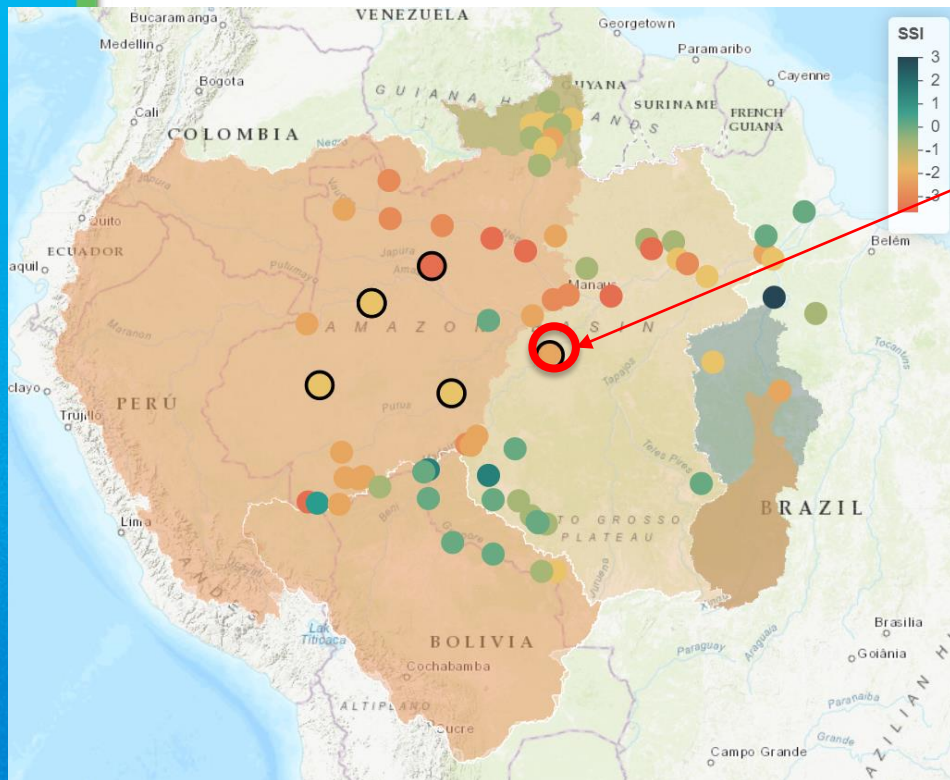
136,86 cm

SSI

-1,3

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

MONITORAMENTO BACIA AMAZÔNICA



Cota mínima (15/10/2010)

16,01 cm

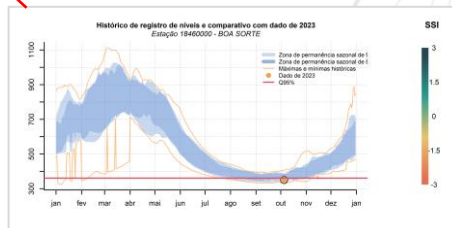
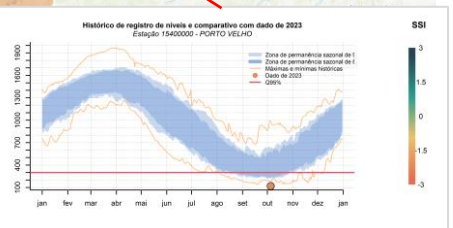
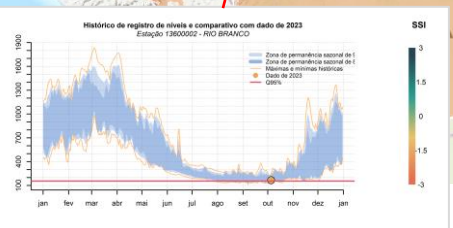
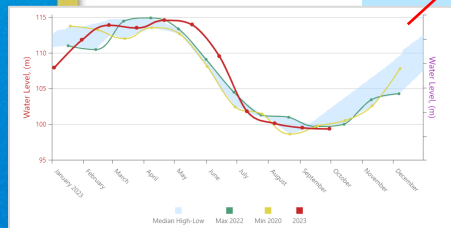
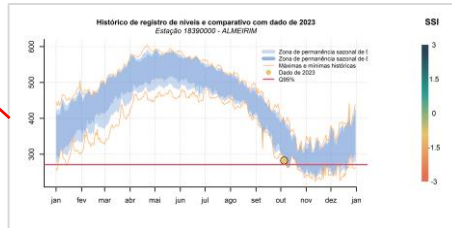
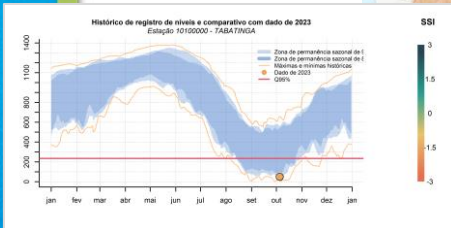
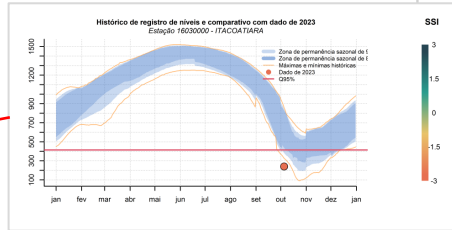
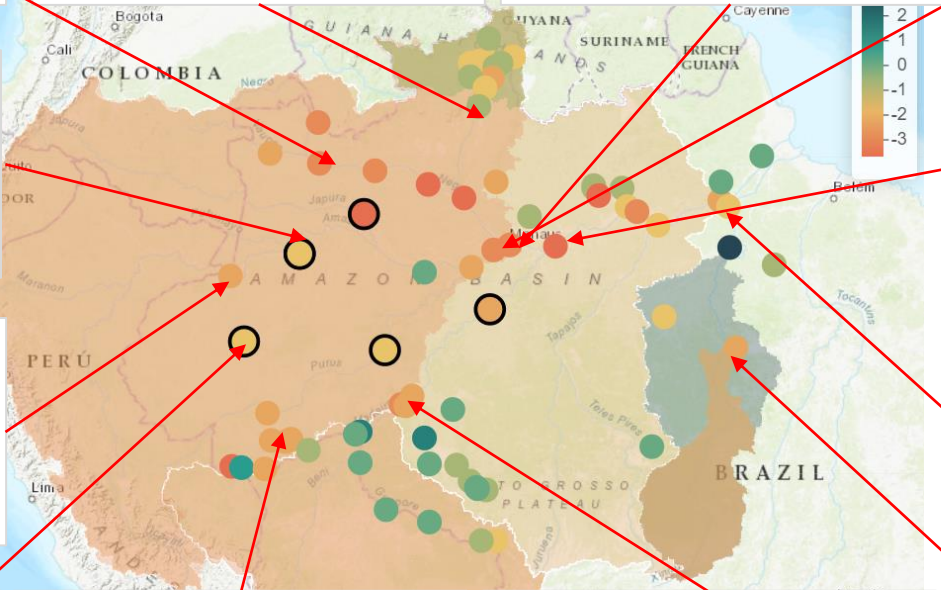
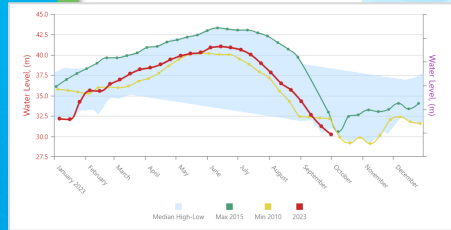
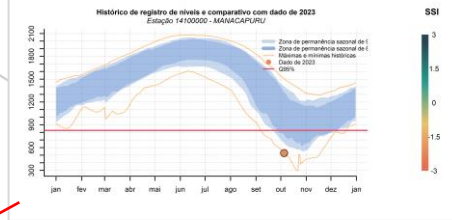
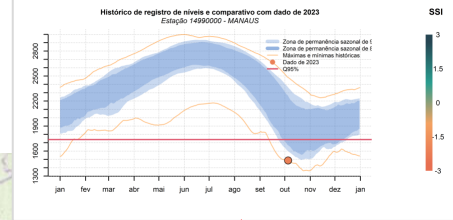
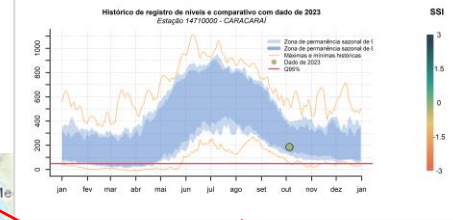
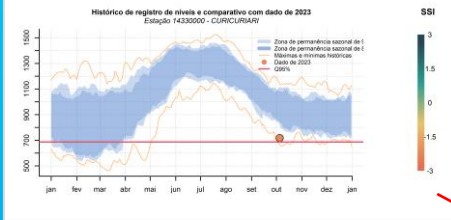
Cota atual (26/09/2023)

16,17 cm

SSI

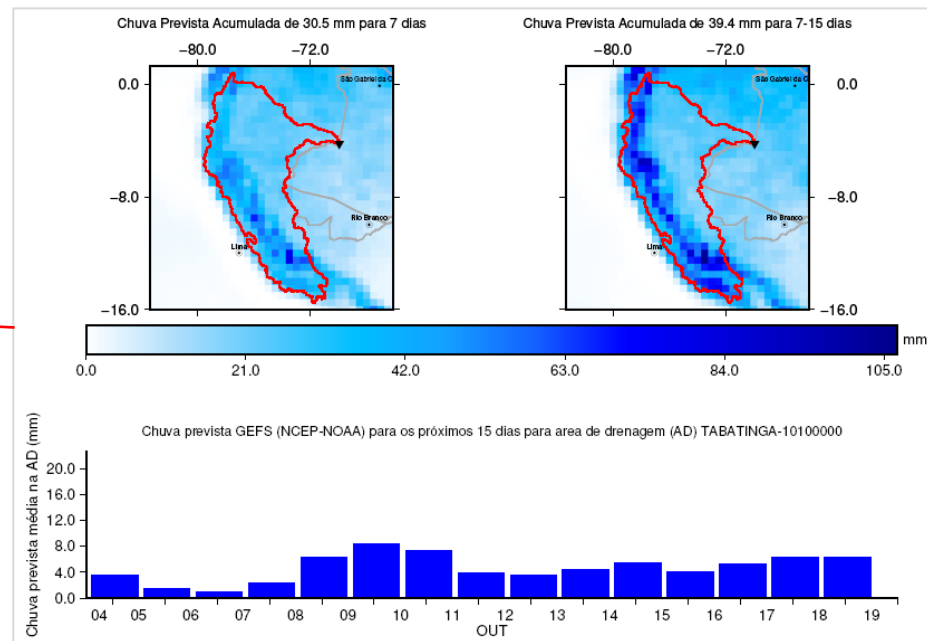
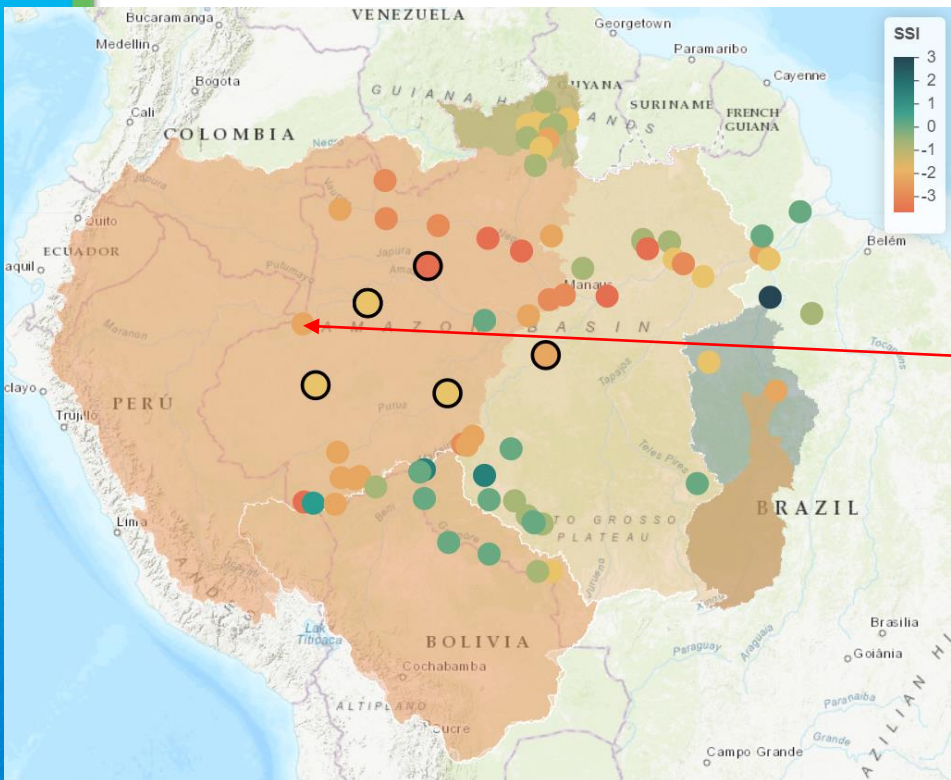
-1,3

CPRM-IRD Projeto de cooperação Internacional Dinâmica Fluvial e www.hydrologyfromspace.org. Produtos baseados no Hydroweb Theia (<https://www.theia-land.fr/en/hydroweb/>)

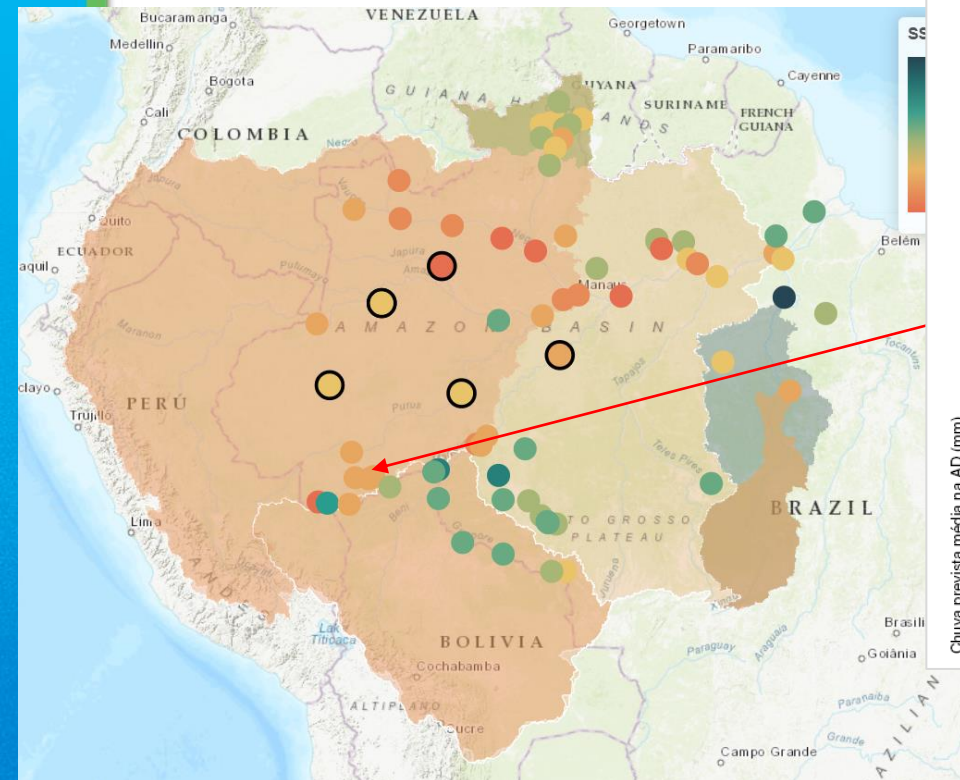


Prognósticos e considerações

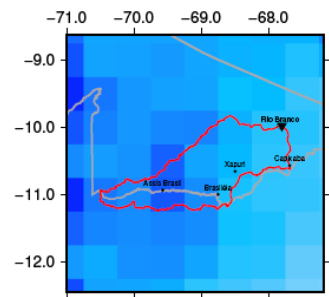
TABATINGA



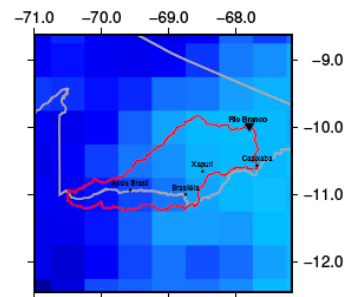
RIO ACRE / RIO BRANCO



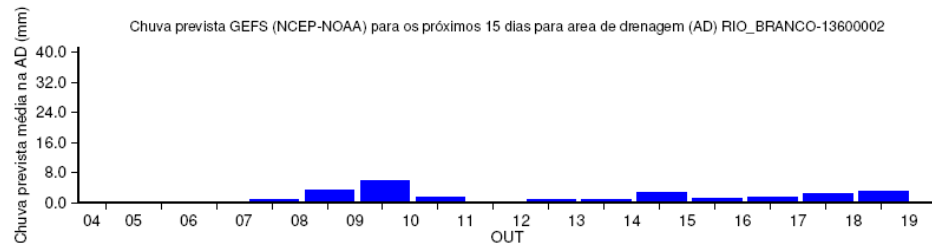
Chuva Prevista Acumulada de 11.2 mm para 7 dias



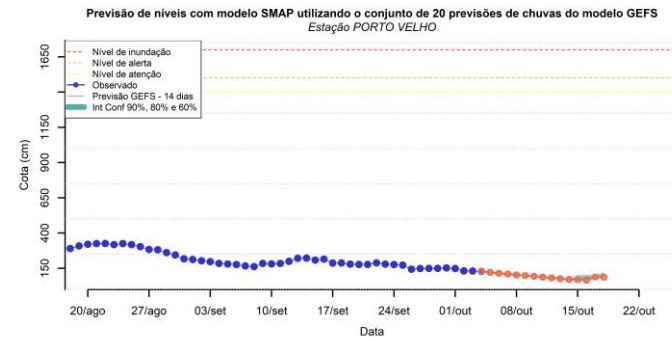
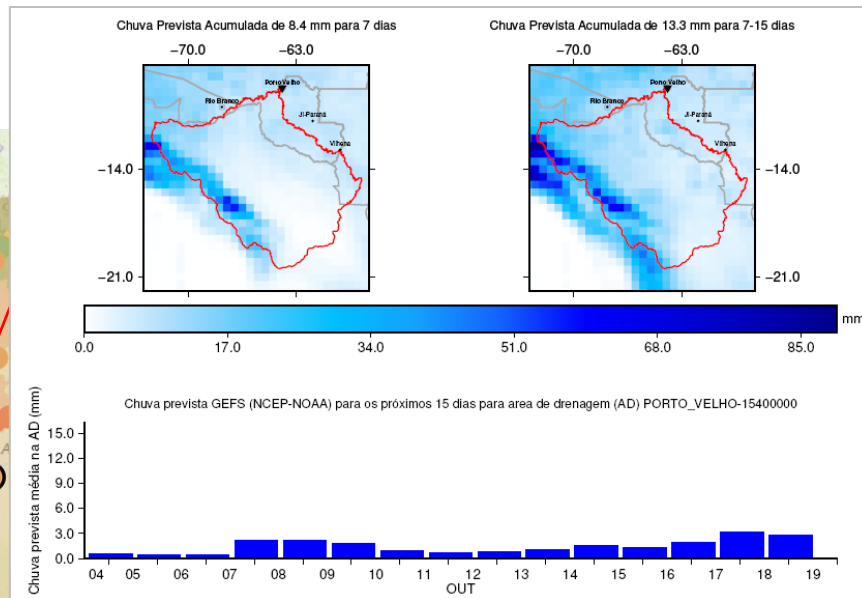
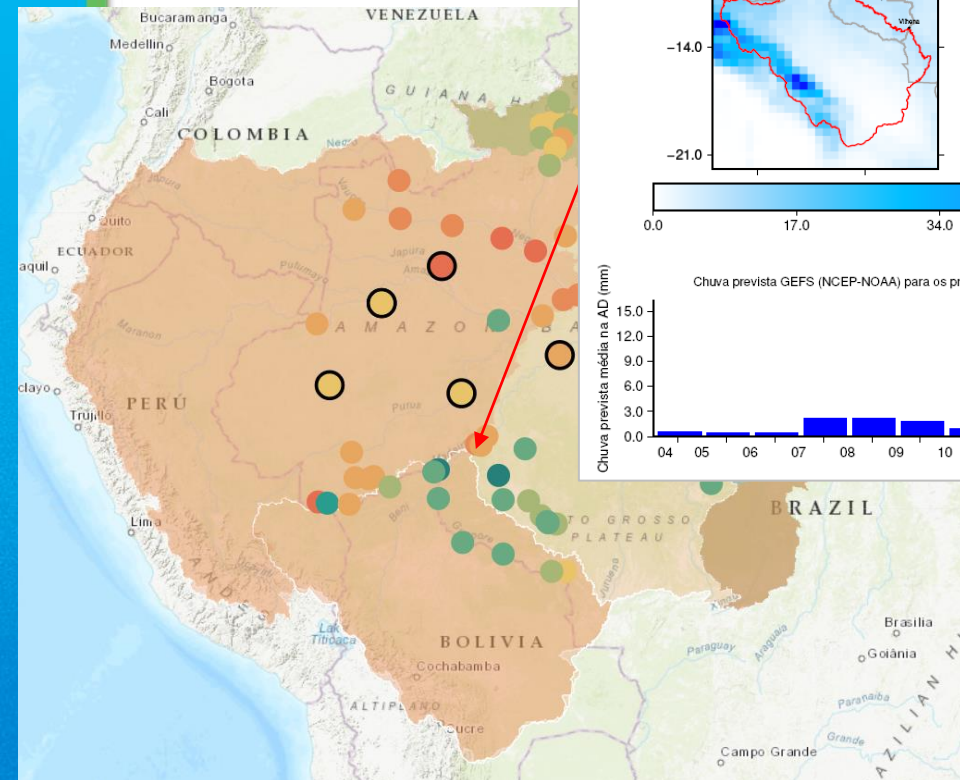
Chuva Prevista Acumulada de 12.5 mm para 7-15 dias



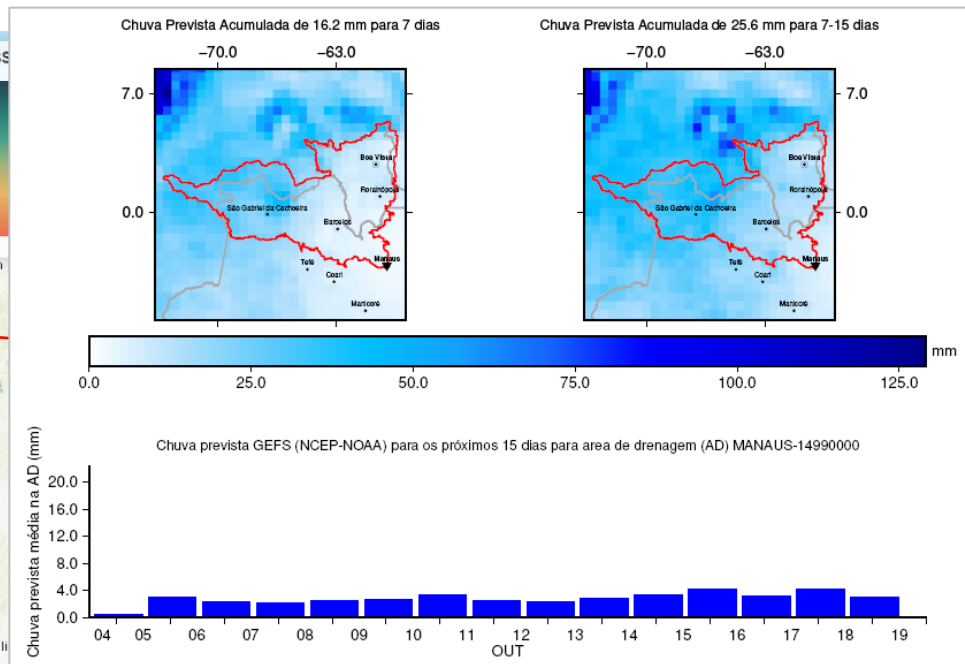
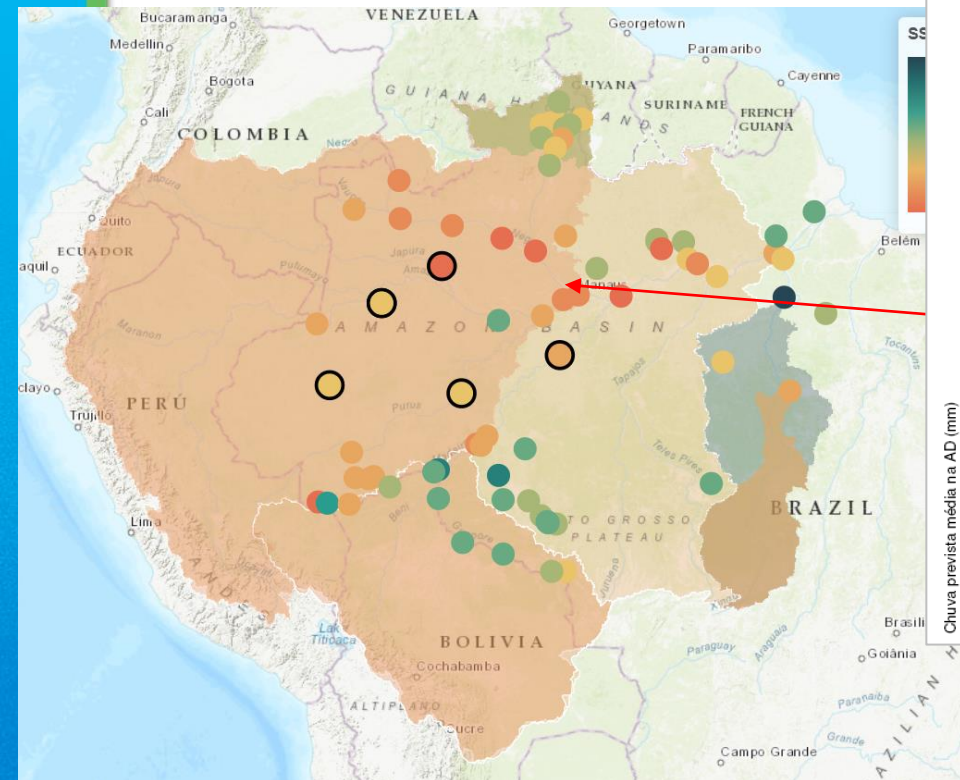
Chuva prevista GEFS (NCEP-NOAA) para os próximos 15 dias para área de drenagem (AD) RIO_BRANCO-13600002



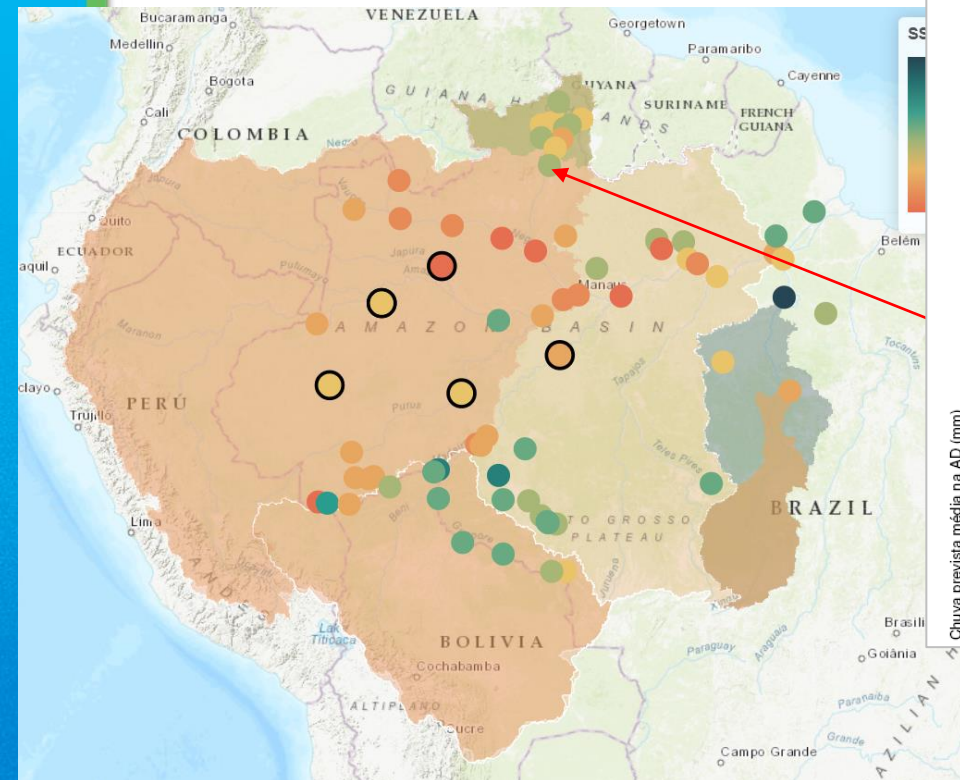
MADEIRA / PORTO VELHO



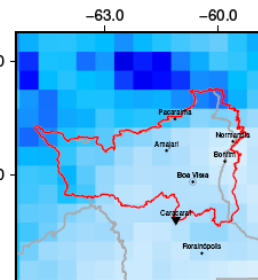
NEGRO / MANAUS



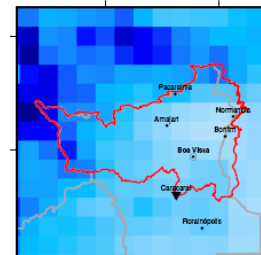
BRANCO / CARACARAÍ



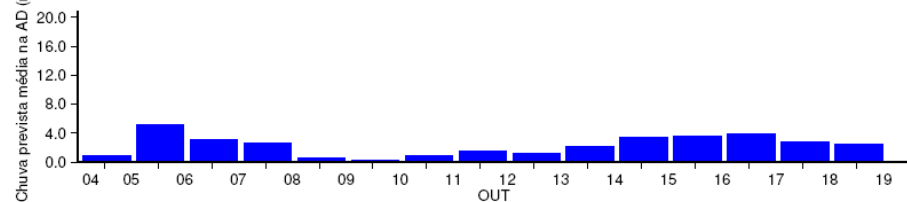
Chuva Prevista Acumulada de 13.4 mm para 7 dias



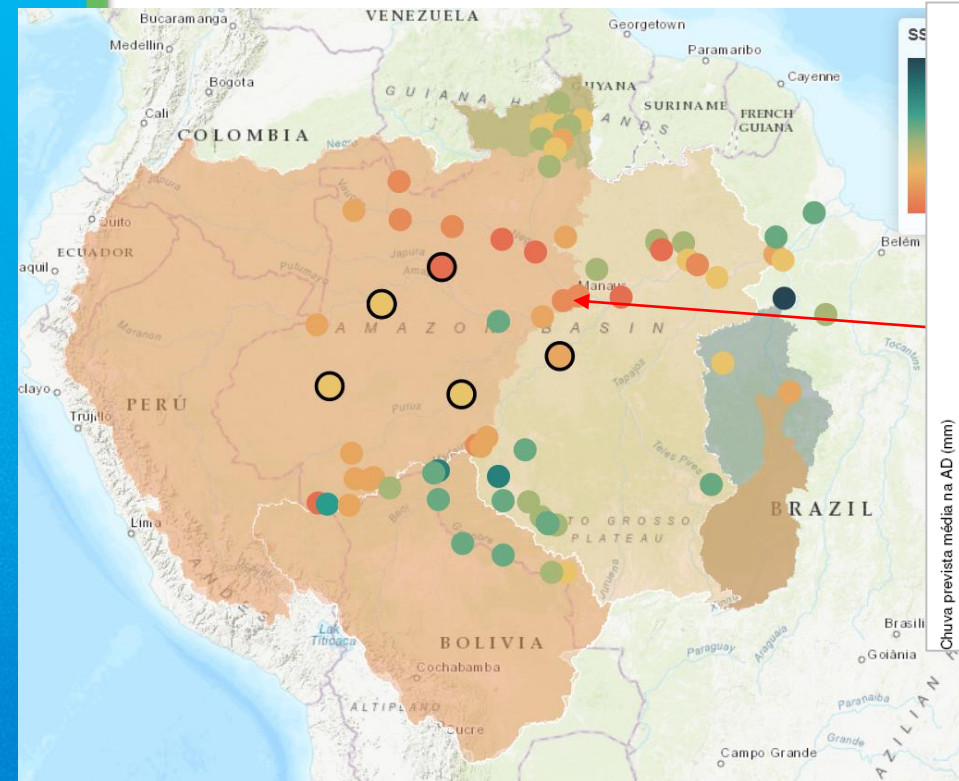
Chuva Prevista Acumulada de 21.1 mm para 7-15 dias



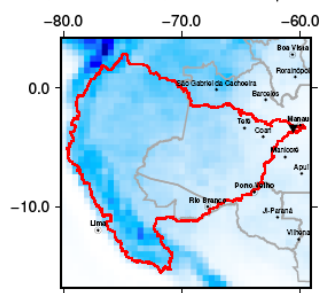
Chuva prevista GEFS (NCEP-NOAA) para os próximos 15 dias para área de drenagem (AD) CARACARAÍ-14710000



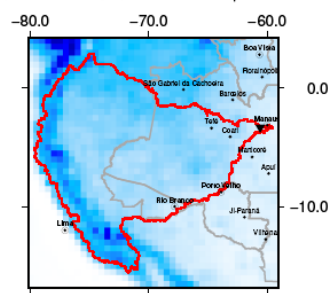
SOLIMÕES / MANACAPURU



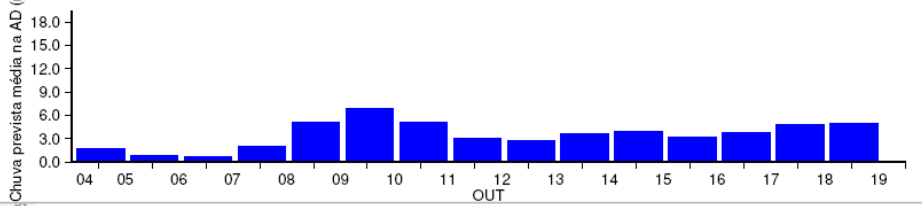
Chuva Prevista Acumulada de 22.4 mm para 7 dias



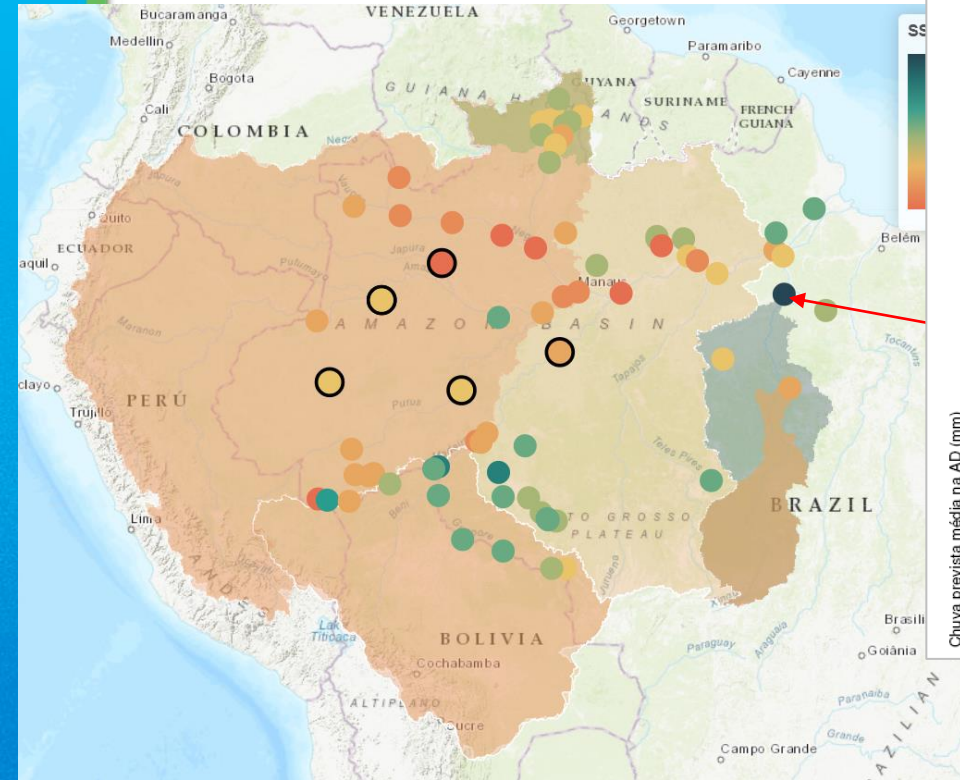
Chuva Prevista Acumulada de 30.0 mm para 7-15 dias



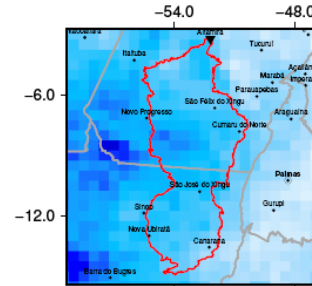
Chuva prevista GEFS (NCEP-NOAA) para os próximos 15 dias para área de drenagem (AD) MANACAPURU-14100000



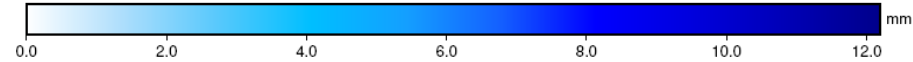
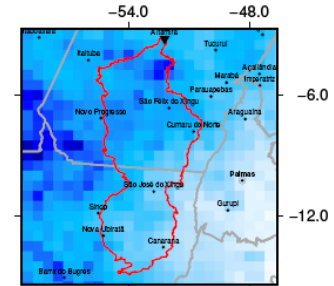
XINGU / ALTAMIRA



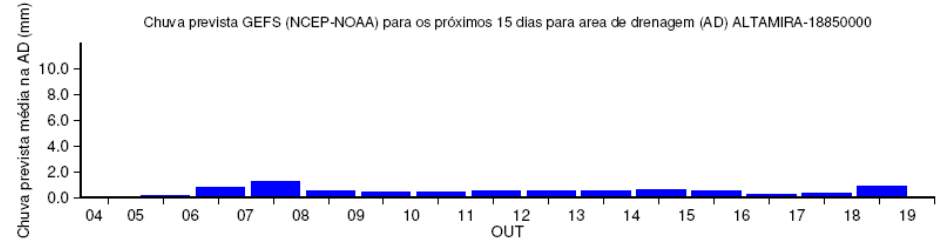
Chuva Prevista Acumulada de 3.5 mm para 7 dias



Chuva Prevista Acumulada de 4.1 mm para 7-15 dias



Chuva prevista GEFS (NCEP-NOAA) para os próximos 15 dias para area de drenagem (AD) ALTAMIRA-18850000



CONSIDERAÇÕES FINAIS

IMPACTOS

- Transporte de grandes cargas
- Transporte de alimentos, remédios e combustíveis para interior
- Mobilidade de pessoas entre comunidades e centros de saúde
- Pesca
- Agricultura
- Terras Caídas na comunidade Arumã
- Consumo de água (qualidade e quantidade)
- Higiene
- Ecologia (mortalidade de Peixes – episódio em Tefé)
- Energia
- Etc.



SERVIÇO GEOLÓGICO DO BRASIL
HÁ 51 ANOS TRABALHANDO PARA O
DESENVOLVIMENTO DO PAÍS

 **SERVIÇO GEOLÓGICO DO BRASIL - CPRM**

Marcus Suassuna Santos
Pesquisador em Geociências

Serviço Geológico do Brasil – CPRM

www.sgb.gov.br

marcus.santos@sgb.gov.br

SGBO
SERVIÇO GEOLÓGICO DO BRASIL - CPRM

MINISTÉRIO DE
MINAS E ENERGIA

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

SAH
SISTEMA DE ALERTA HIDROLÓGICO
Serviço Geológico do Brasil (SGBO/CPRM)

SGBO
SERVIÇO GEOLÓGICO DO BRASIL - CPRM