



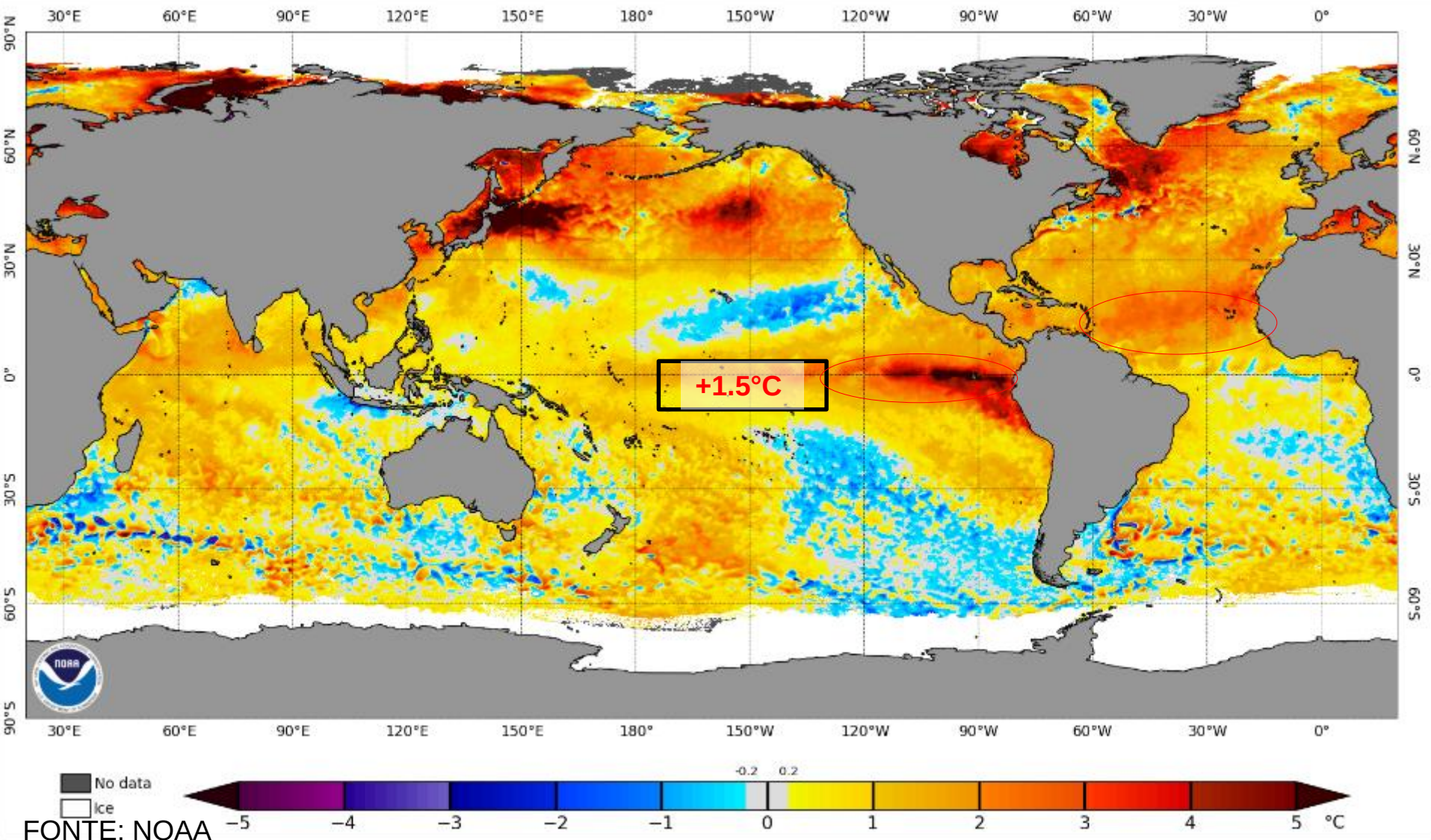
CEMADEN

**Centro Nacional de Monitoramento e
Alertas de Desastres Naturais**

Monitoramento da situação do “El Niño” na Região Norte

01 de setembro de 2023

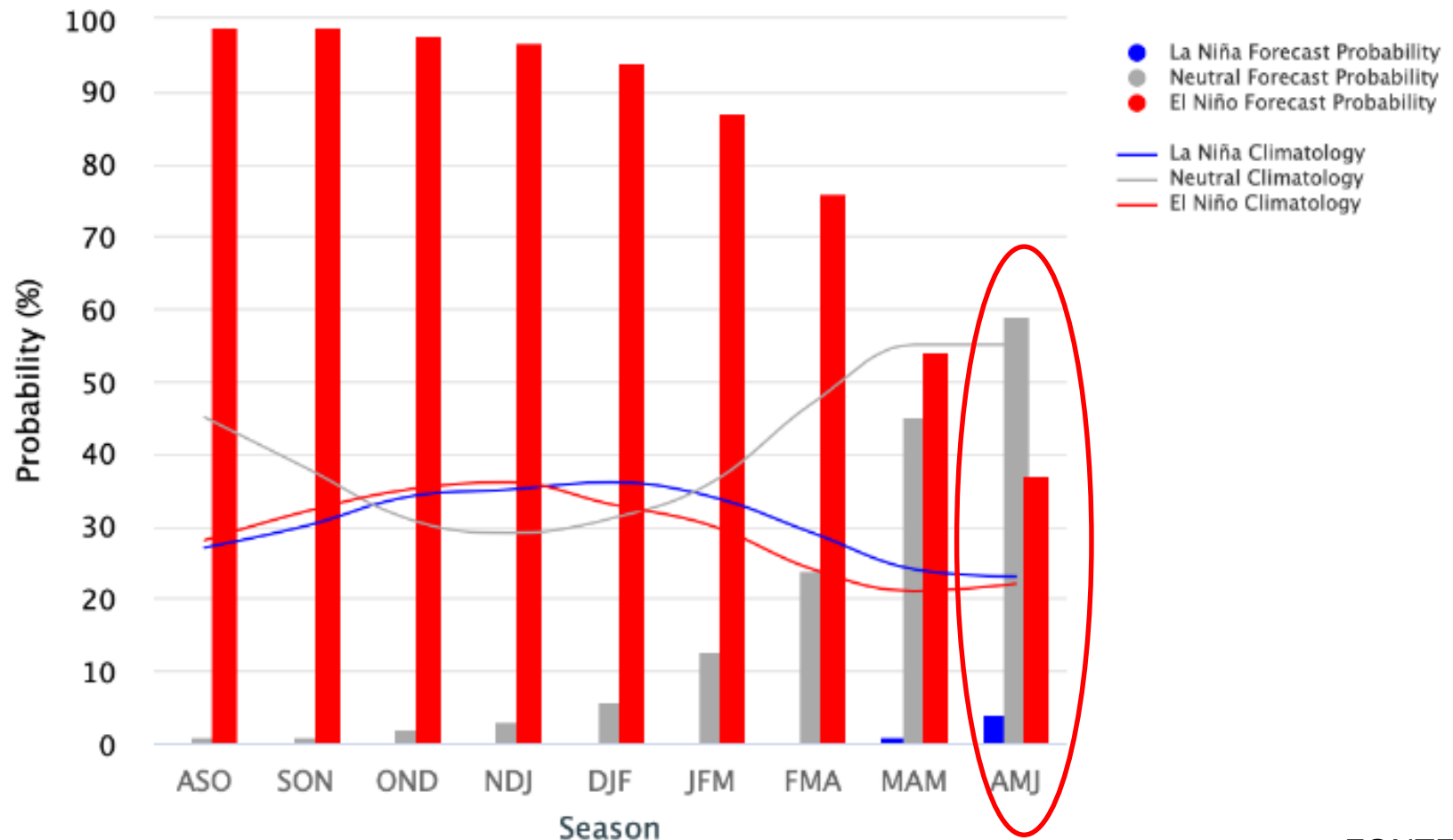
Status Atual: **El Niño**



Previsão do “ENSO”

Mid-August 2023 IRI Model-Based Probabilistic ENSO Forecasts

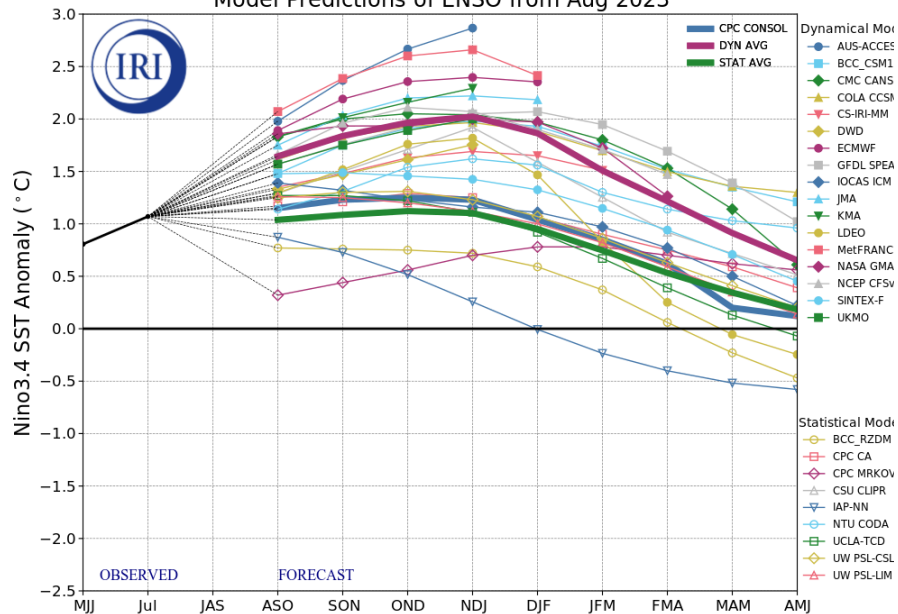
ENSO state based on NINO3.4 SST Anomaly Neutral ENSO: -0.5°C to 0.5°C



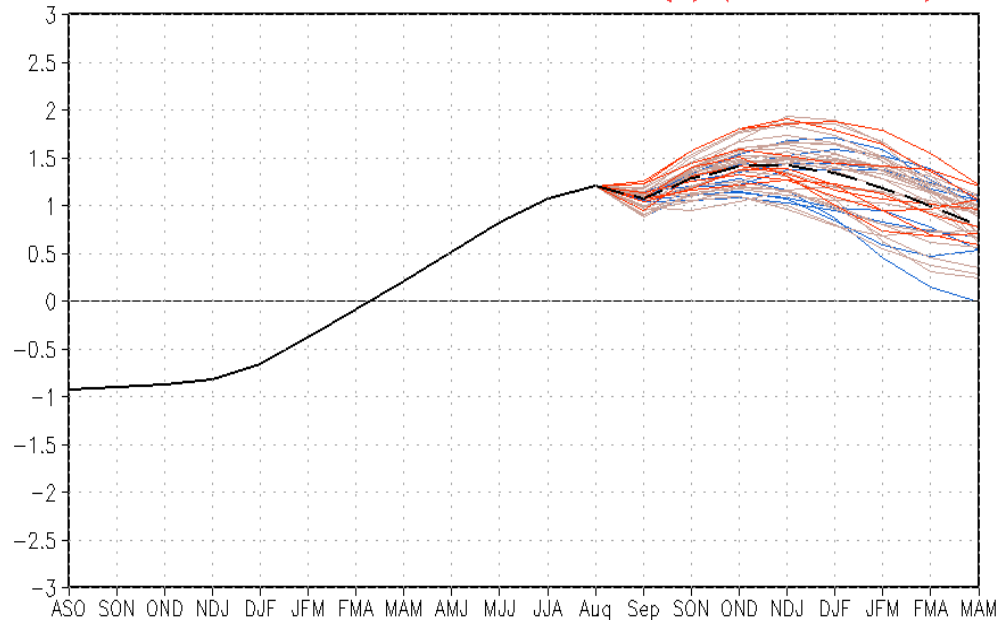
FONTE: IRI

Previsão do “ENSO”

Model Predictions of ENSO from Aug 2023



CFSv2 forecast Nino3.4 SST anomalies (K) (PDF corrected)



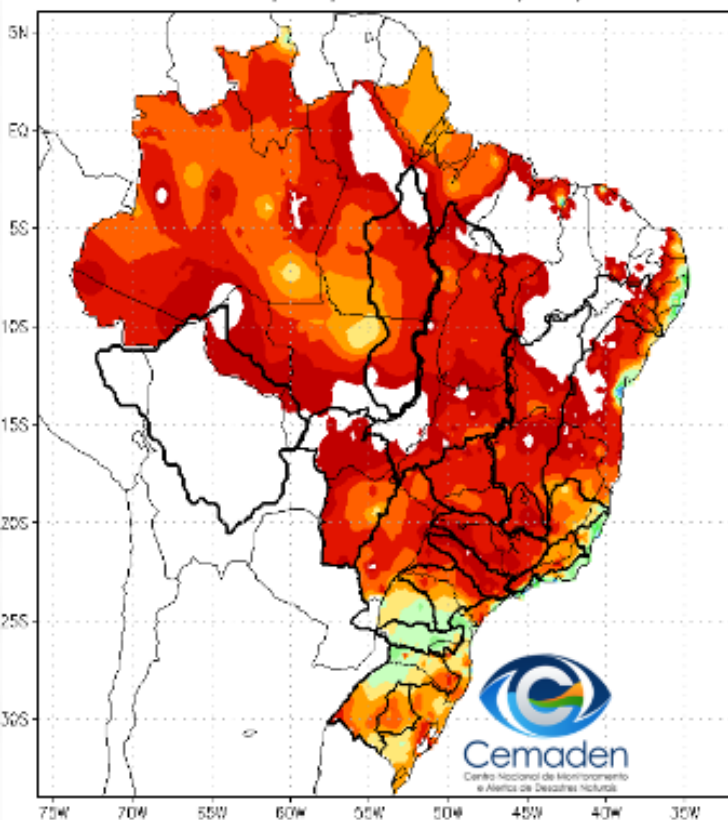
FONTE: NOAA

(Climatology base period: 1991–2020)

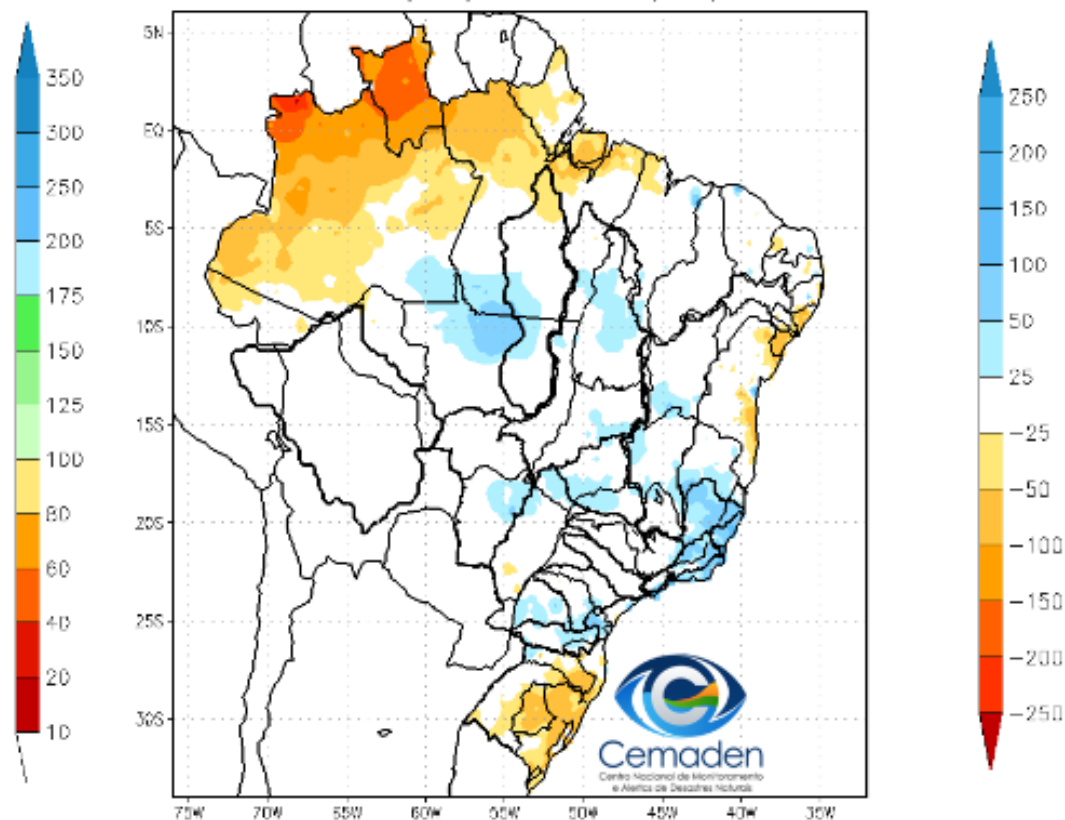
Atualizado: 28 de Agosto 2023

Precipitação nos últimos 30 dias

Precipitação Acumulada (mm) A.S.
Período: 01/08/2023 a 31/08/2023



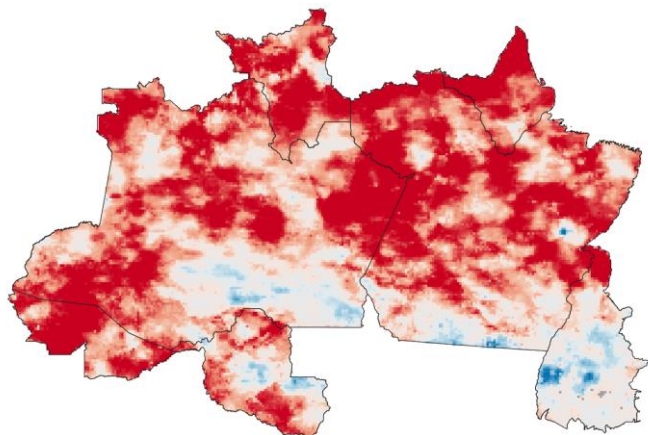
Anomalia de Precipitação (mm) A.S.
Período: 01/08/2023 a 31/08/2023



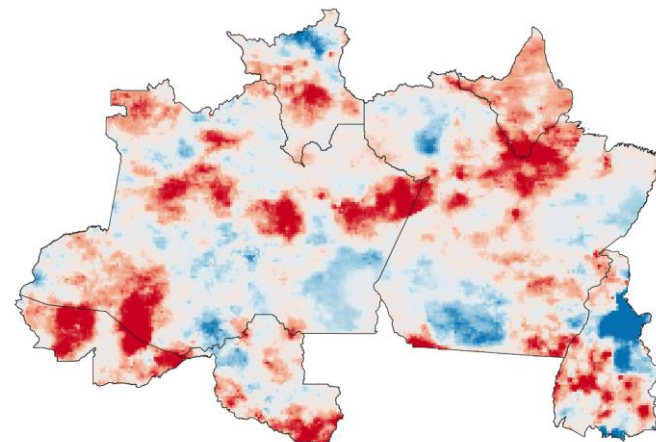
FONTE DOS DADOS: INPE

SPI: AGOSTO 2023

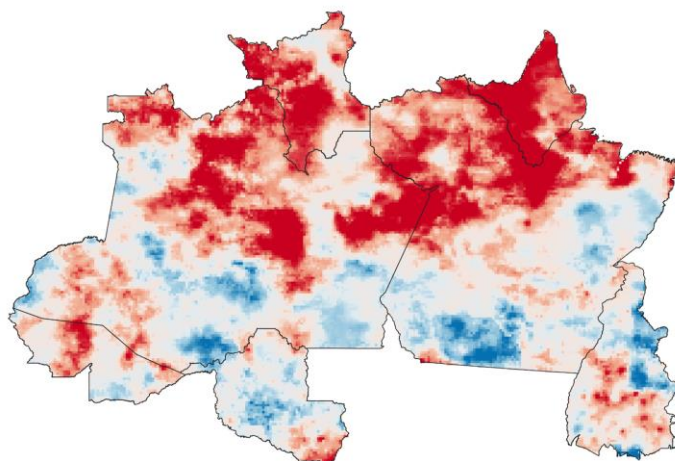
SPI03



SPI12



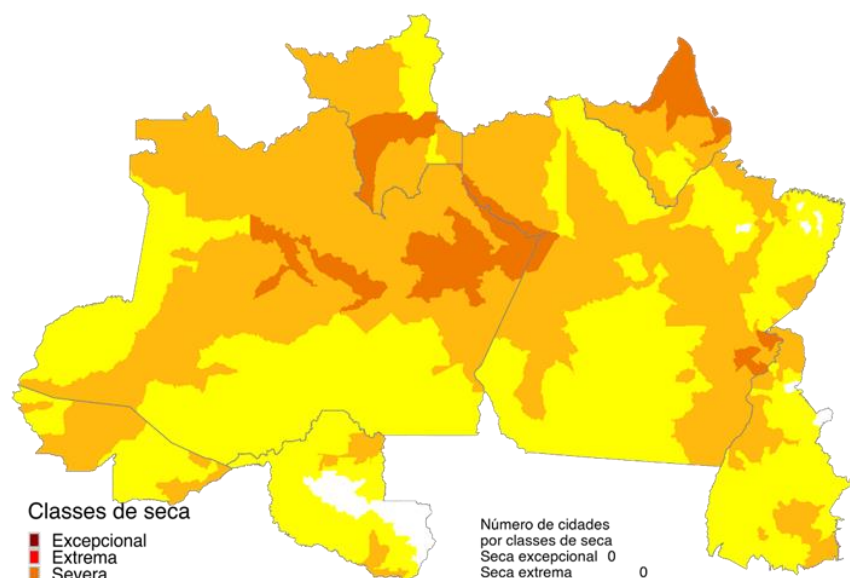
SPI06



ÍNDICE INTEGRADO DE SECA - IIS

(SPI3 E 6 + VHI + AUS): AGOSTO/2023

IIS 3 MESES



Classes de seca

- Excepcional
- Extrema
- Severa
- Moderada
- Fraca
- Condição normal

Número de cidades
por classes de seca

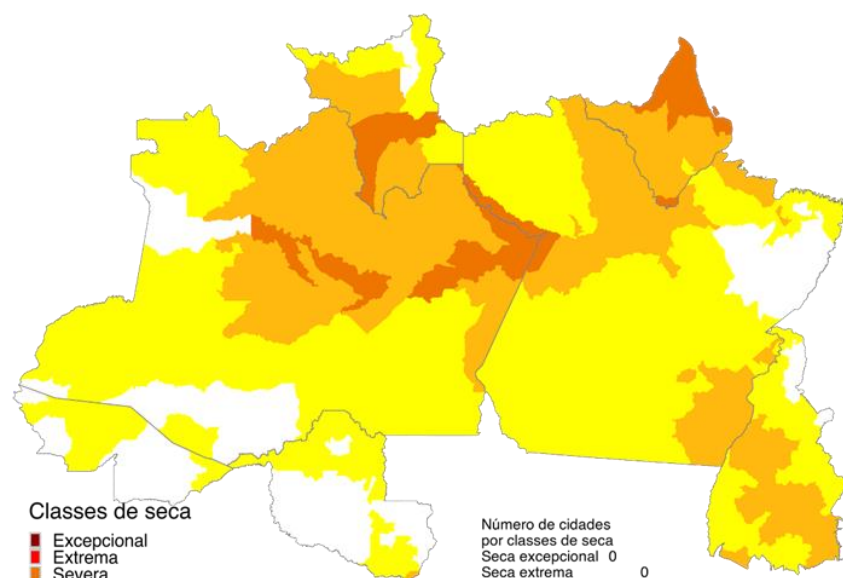
Seca excepcional	0
Seca extrema	34
Seca severa	190
Seca moderada	204

Agosto 2023

Índice Integrado de Seca (SPI3, VHI, US)

Dados: CPTEC/INPE - NOAA - NASA / Preparação: Cemaden/MCTI

IIS 6 MESES



Classes de seca

- Excepcional
- Extrema
- Severa
- Moderada
- Fraca
- Condição normal

Número de cidades
por classes de seca

Seca excepcional	0
Seca extrema	23
Seca severa	134
Seca moderada	199

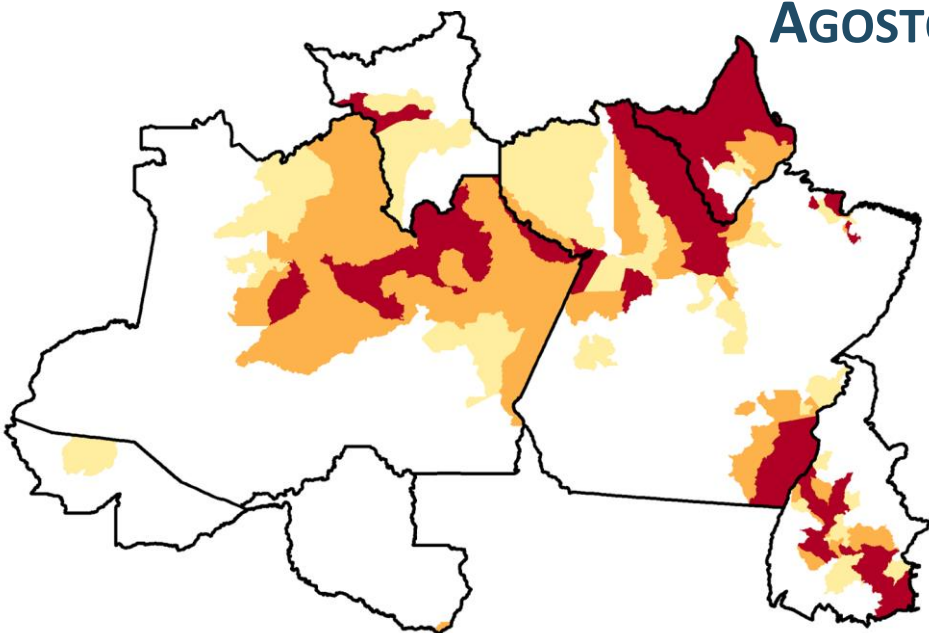
Agosto 2023

Índice Integrado de Seca (SPI6, VHI, US)

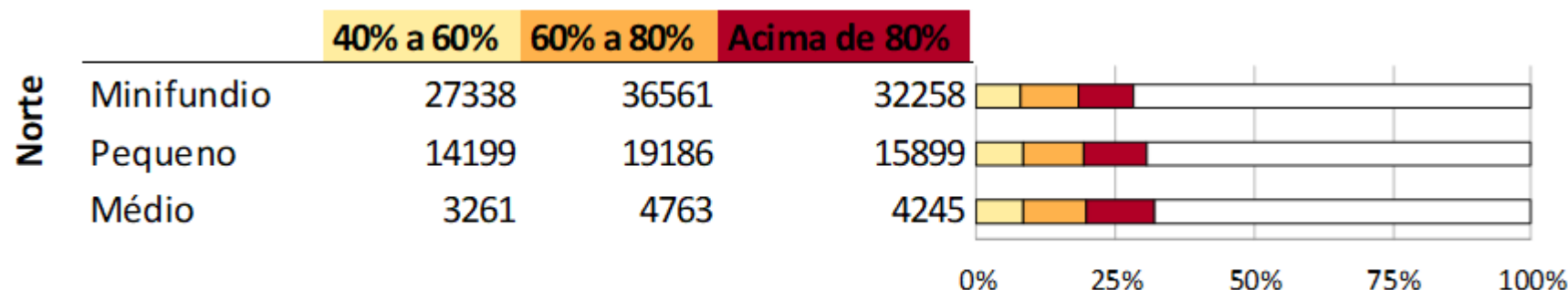
Dados: CPTEC/INPE - NOAA - NASA / Preparação: Cemaden/MCTI

ÁREAS DE PASTAGENS E AGRÍCOLAS AFETADAS PELA SECA

AGOSTO/23

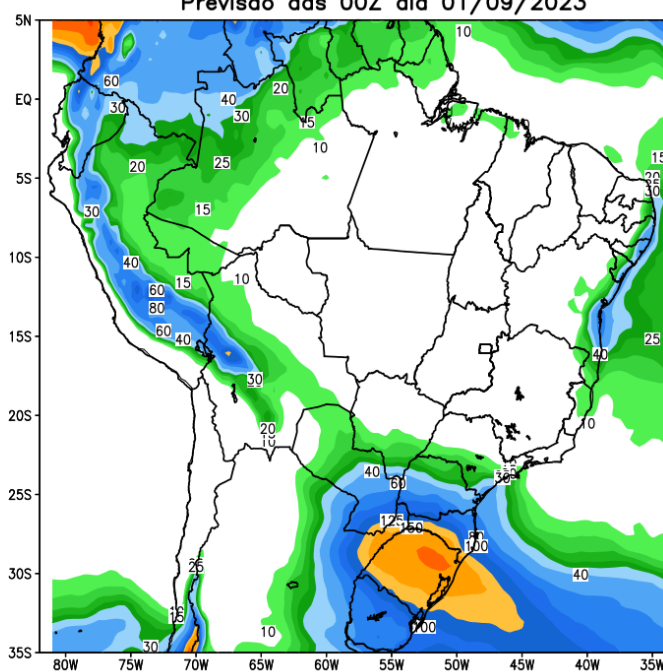


UF	40 a 60%	60 - 80%	> 80%
AC	1		
AM	3	25	8
AP	1	5	8
PA	14	16	19
RO		1	
RR	2		1
TO	12	8	34

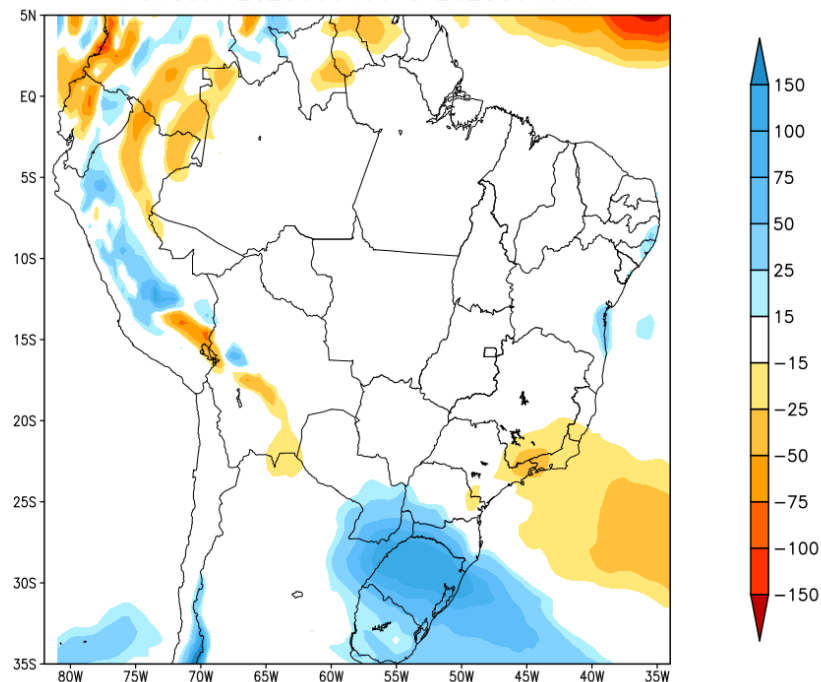


Previsão de chuva próximas duas semanas

GEFS / BRASIL
Precipitação acumulada 14 dias (mm)
Previsão das 00Z dia 01/09/2023

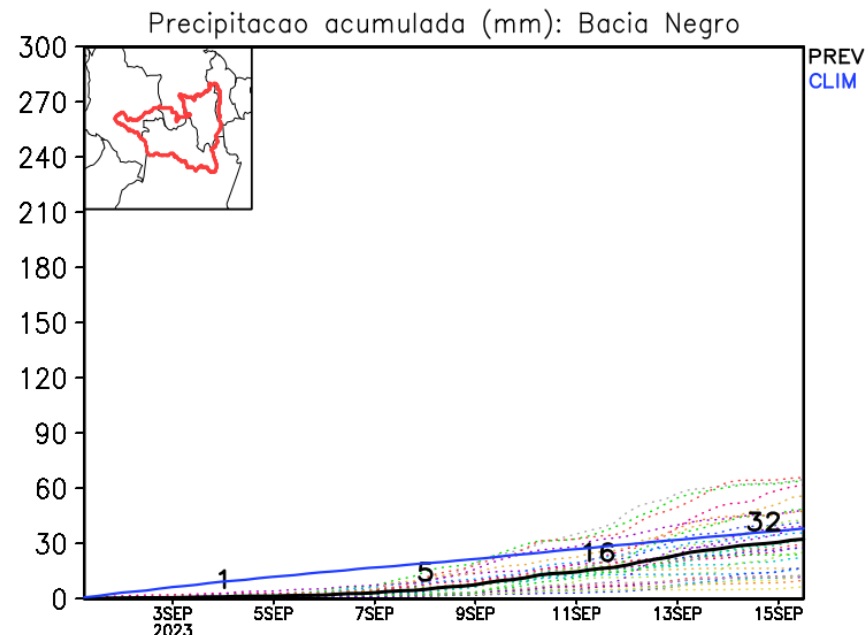
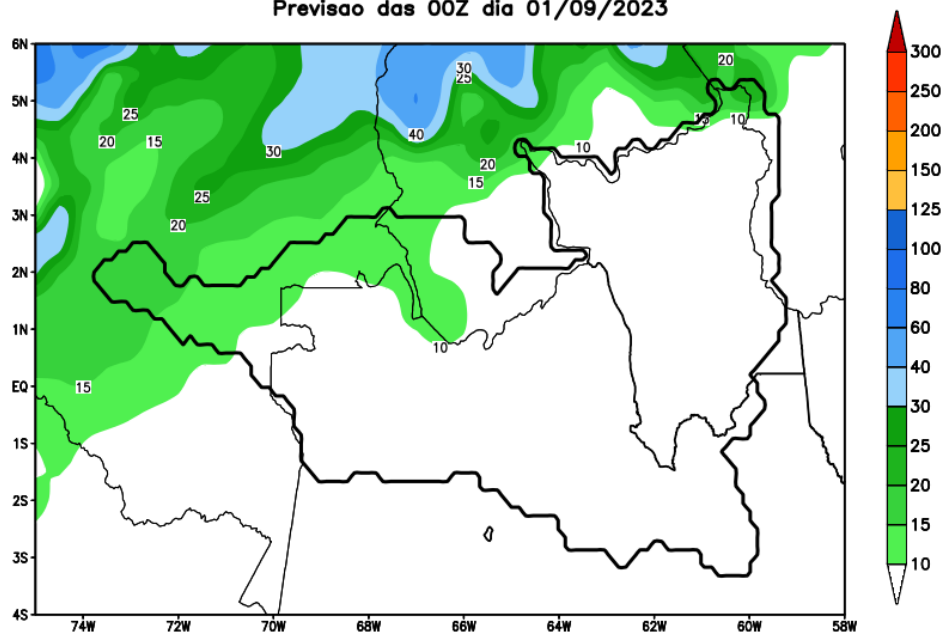


Anomalia de Precipitação BR (mm)
Período: 2023090100 a 2023091500



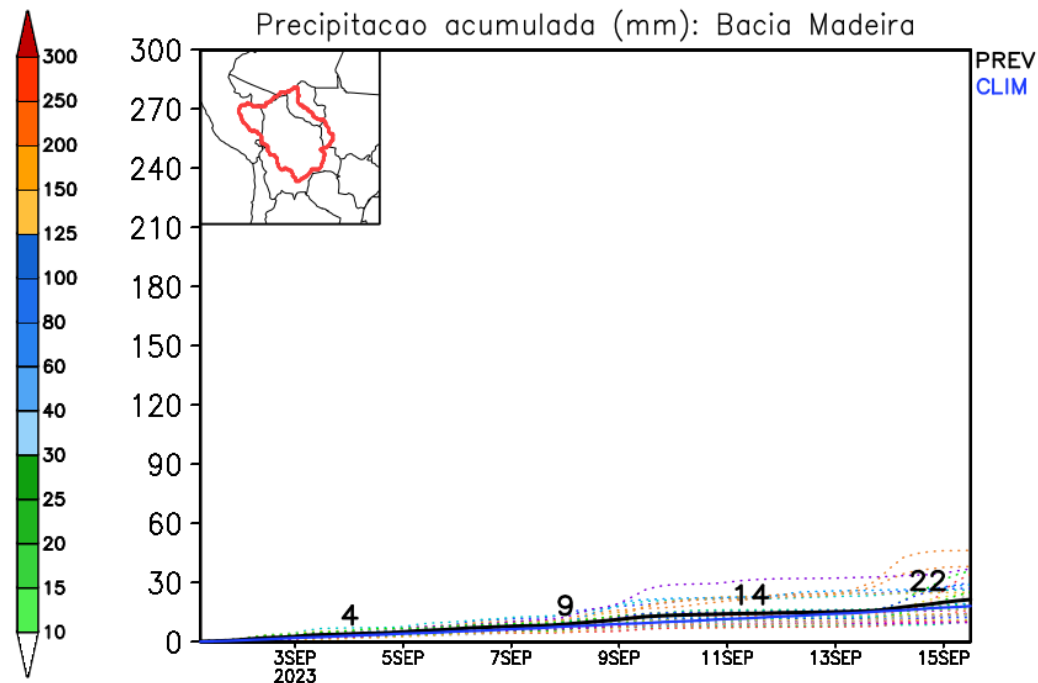
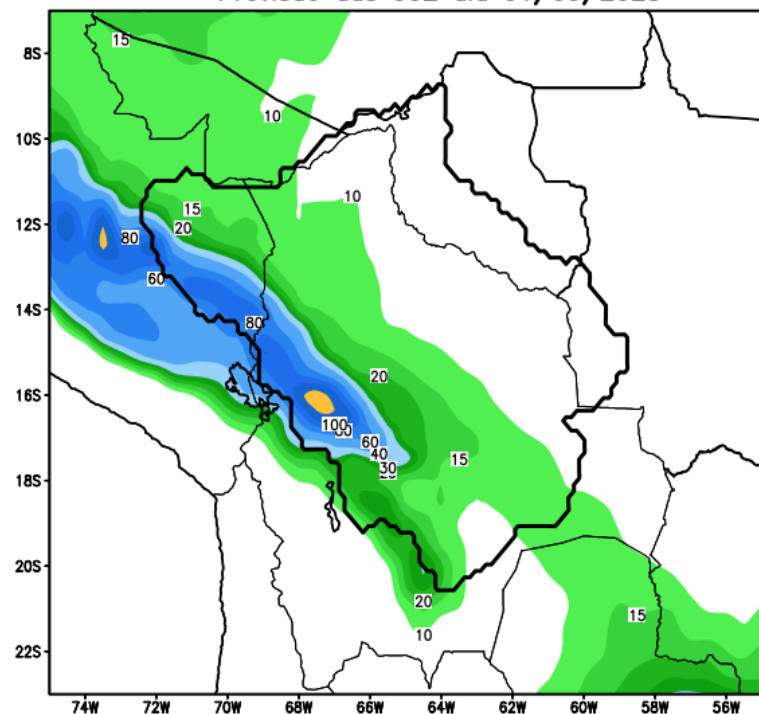
Previsão de chuva próximas duas semanas

GEFS / Bacia do Rio Negro
Precipitação acumulada em 7 dias (mm)
Previsão das 00Z dia 01/09/2023

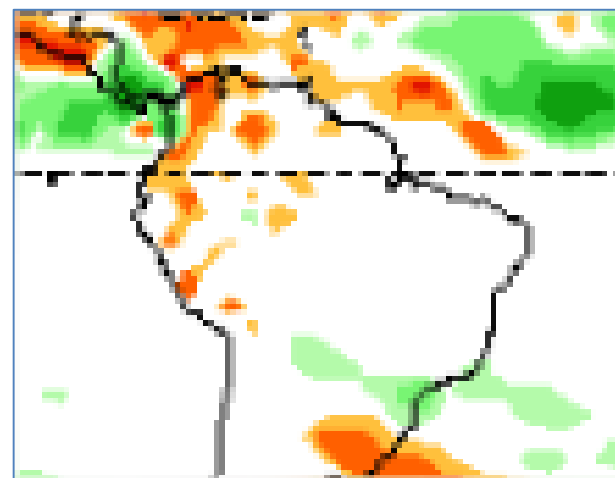
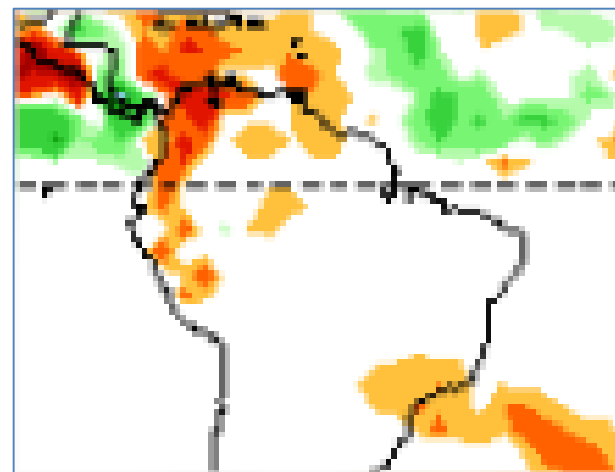
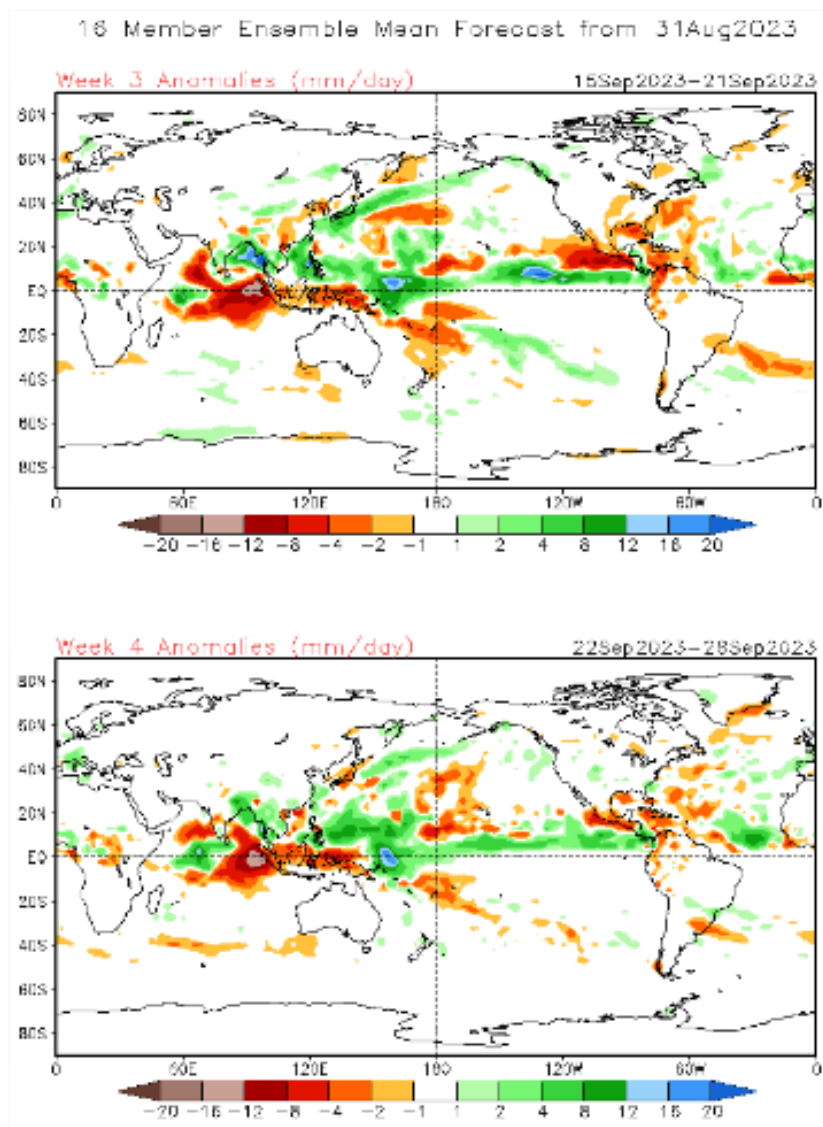


Previsão de chuva próximas duas semanas

GEFS / Bacia do Rio Madeira
Precipitação acumulada em 14 dias (mm)
Previsão das 00Z dia 01/09/2023



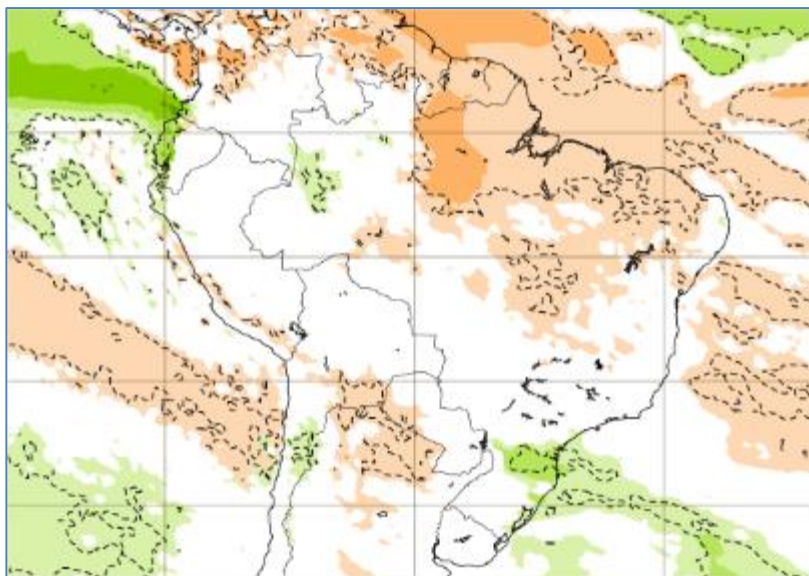
Tendência 3a e 4a semanas



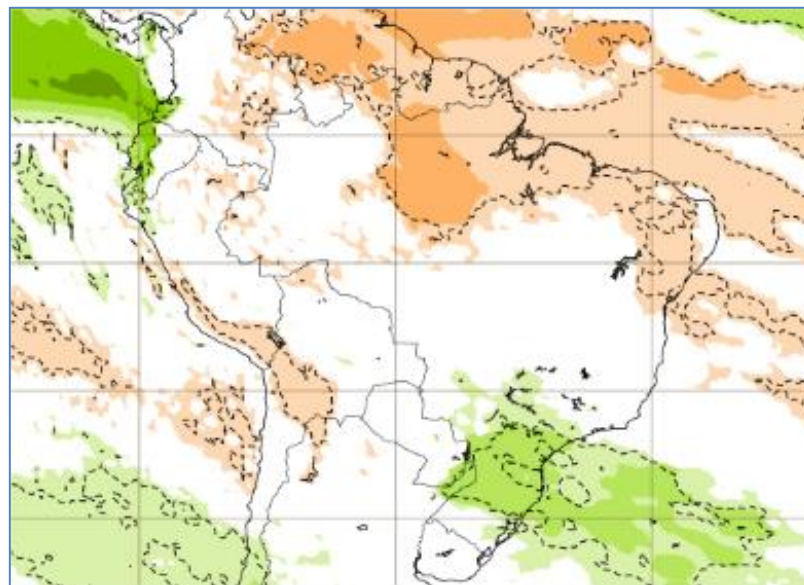
Modelo CFS/NOAA

Tendência para 3^a e 4^a semanas

18-25/09



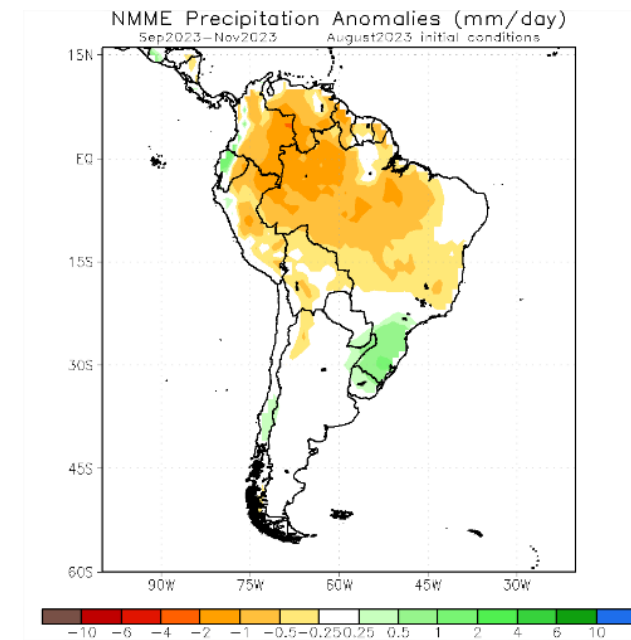
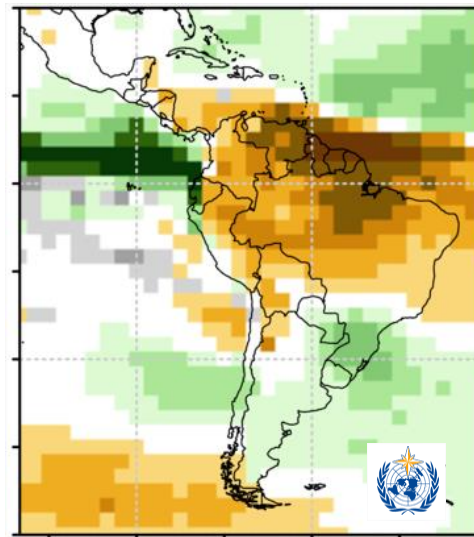
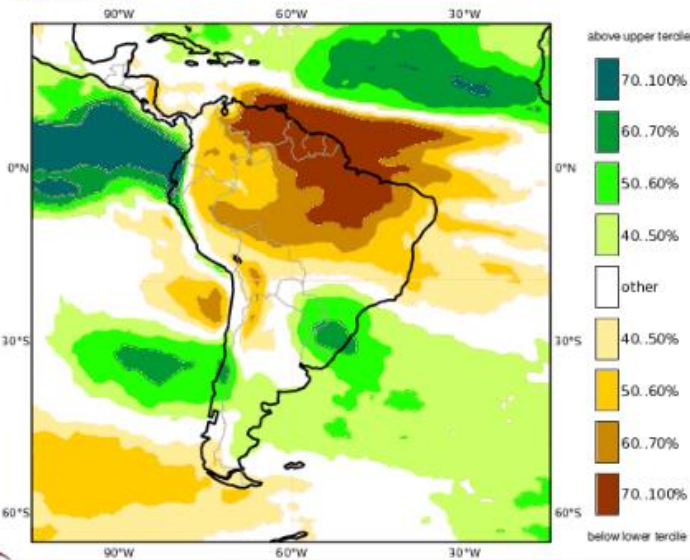
25/09-02/10



Previsão Multi Modelo SON

C3S multi-system seasonal forecast
Prob(most likely category of precipitation)
Nominal forecast start: 01/08/23
Unweighted mean

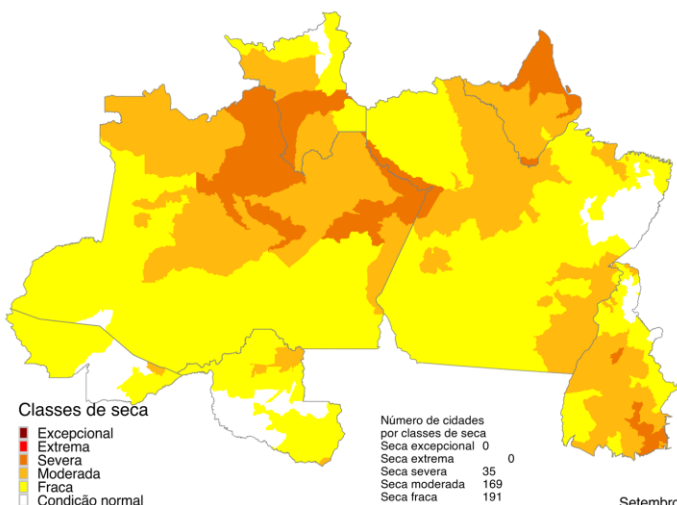
SON 2023



Setembro/23

CHUVA 50% ABAIXO DA MÉDIA

Outubro/23

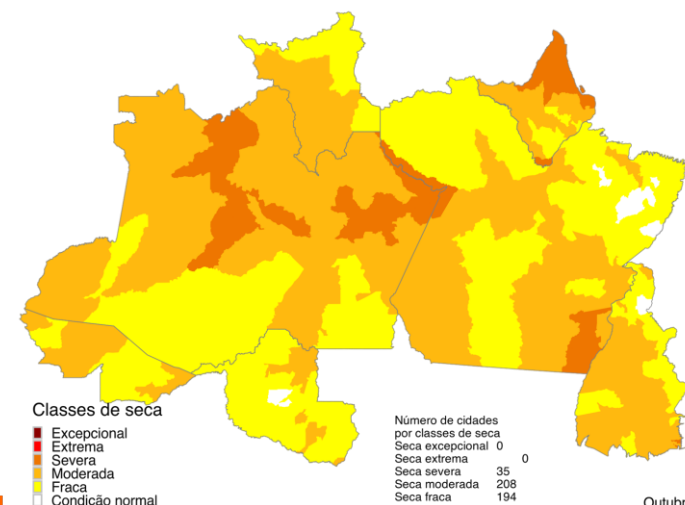


Setembro 2023
Índice Integrado de Seca (SPI6, VHI, US)
Dados: CPTEC/INPE - NOAA - NASA / Preparação: Cemaden/MCTI

IIS

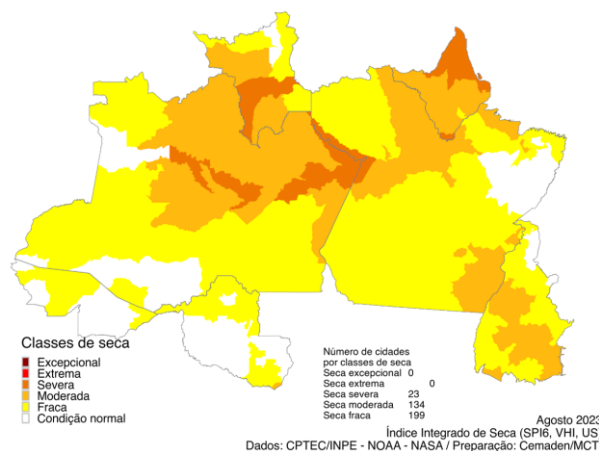
- Seca Excepcional
- Seca Extrema
- Seca Severa
- Seca Moderada
- Seca Fraca
- Normal

IIS OBSERVADO (IIS6)



Outubro 2023
Índice Integrado de Seca (SPI6, VHI, US)
Dados: CPTEC/INPE - NOAA - NASA / Preparação: Cemaden/MCTI

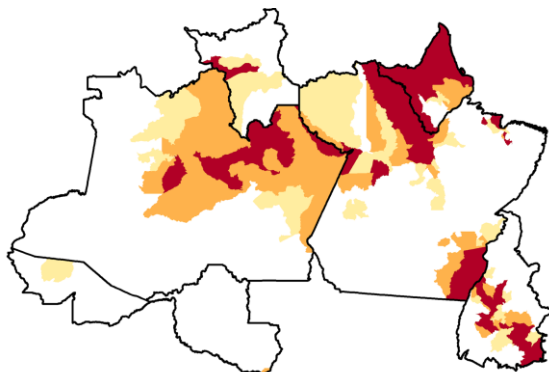
Agosto/23



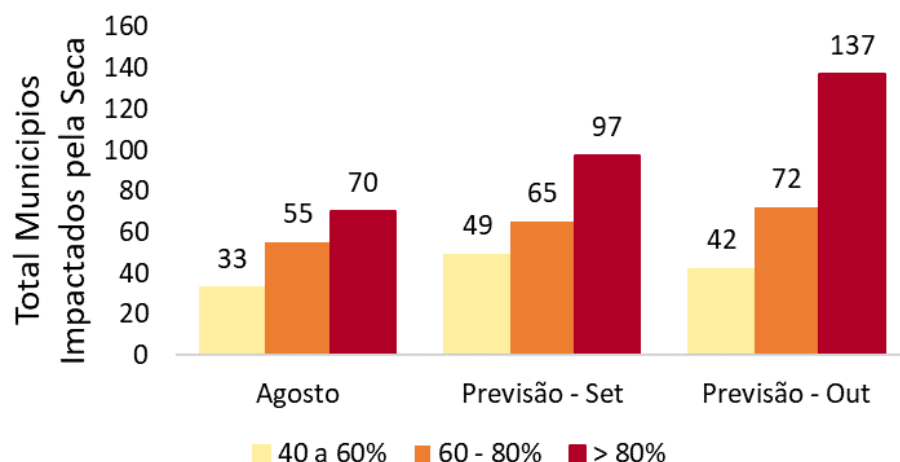
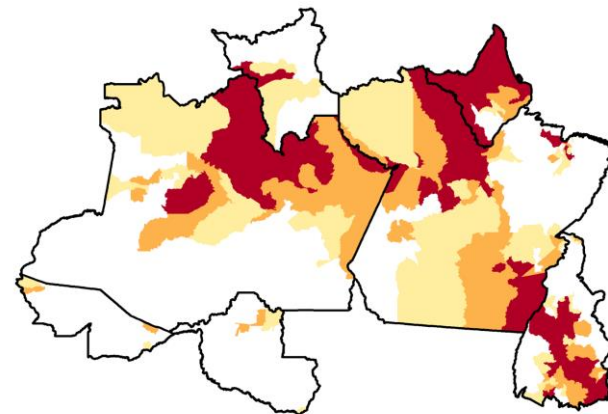
Agosto 2023
Índice Integrado de Seca (SPI6, VHI, US)
Dados: CPTEC/INPE - NOAA - NASA / Preparação: Cemaden/MCTI

ÁREAS DE PASTAGENS E AGRÍCOLAS AFETADAS PELA SECA

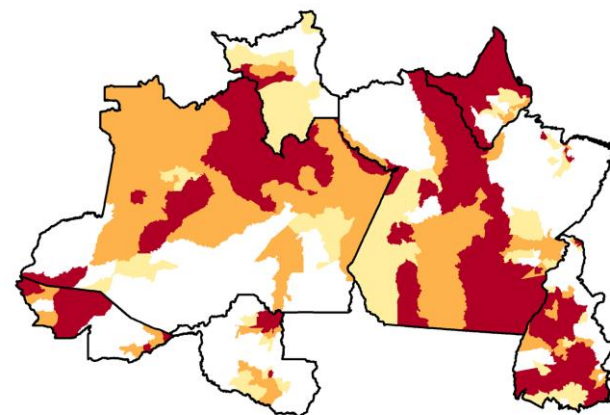
AGOSTO/23



CENÁRIO SET/23



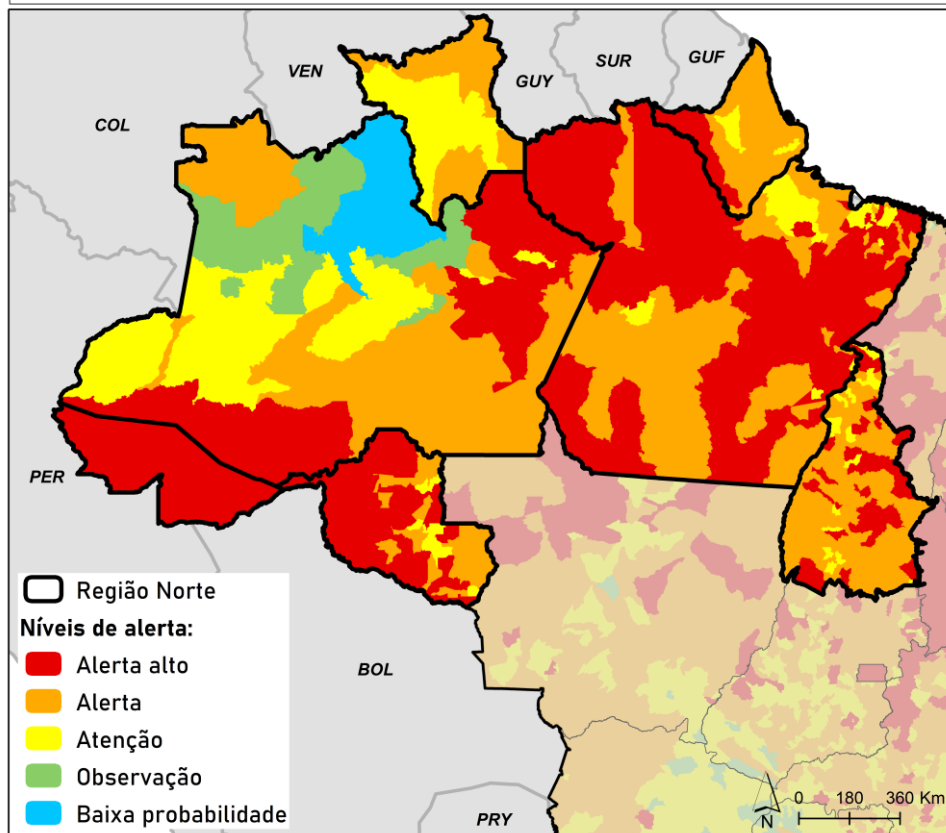
CENÁRIO OUT/23



Previsão de probabilidade de fogo - Set-Out-Nov 2023

Previsão de alertas por municípios

Previsão da Probabilidade de Fogo para a região Norte brasileira
para o período de Setembro, Outubro e Novembro de 2023



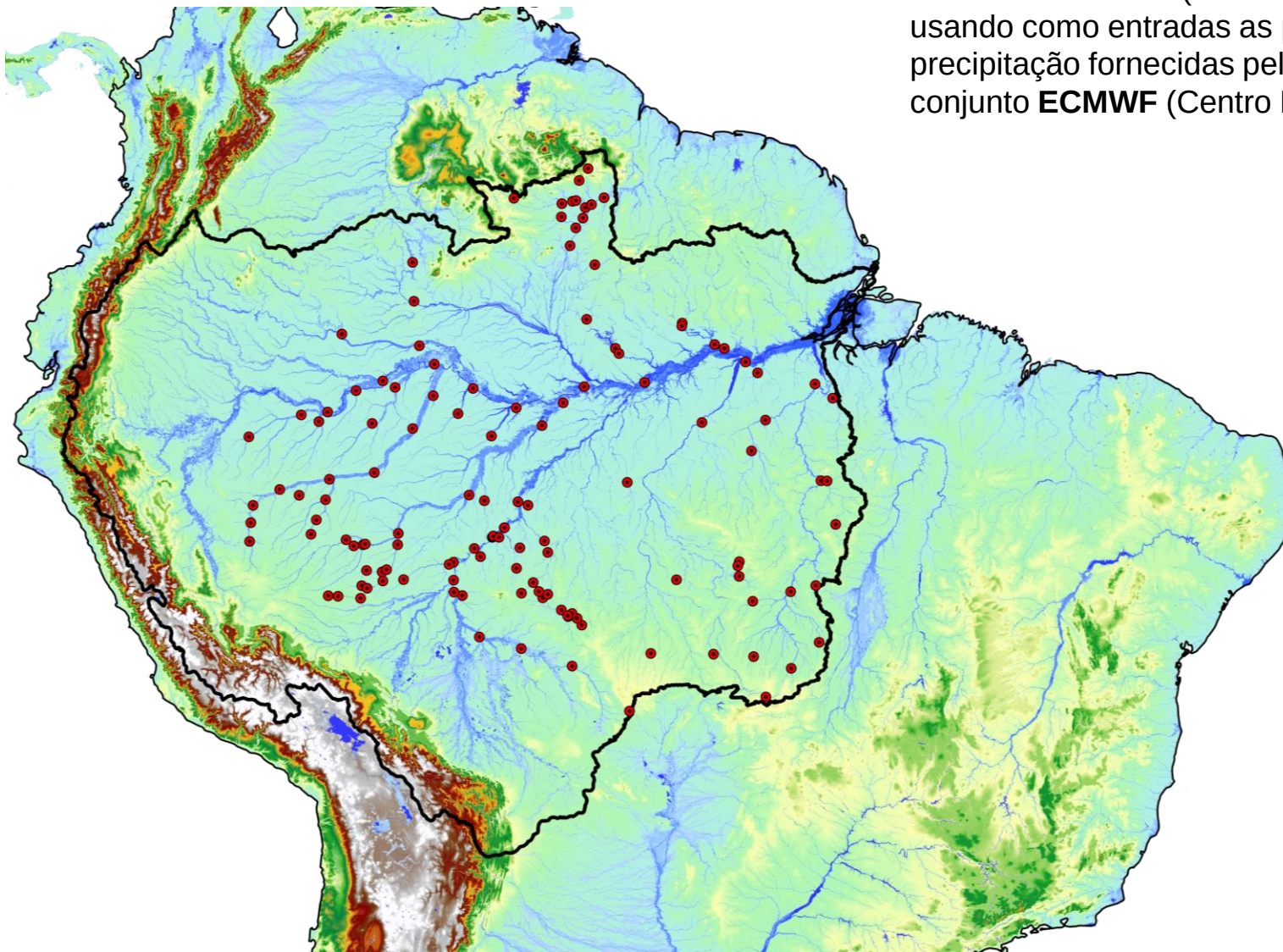
Resultados dos níveis de alerta para
municípios brasileiros da Região Norte:

Nível de Alerta	Número de municípios	Área (km²)
Alerta alto	177	1,534,623
Alerta	148	1,461,803
Atenção	102	604,959
Observação	1	16,831
Baixa probabilidade	7	208,704

Aumento do número de municípios em
níveis de **Alerta Alto** e **Alerta**!

Previsão Hidrológica: Norte

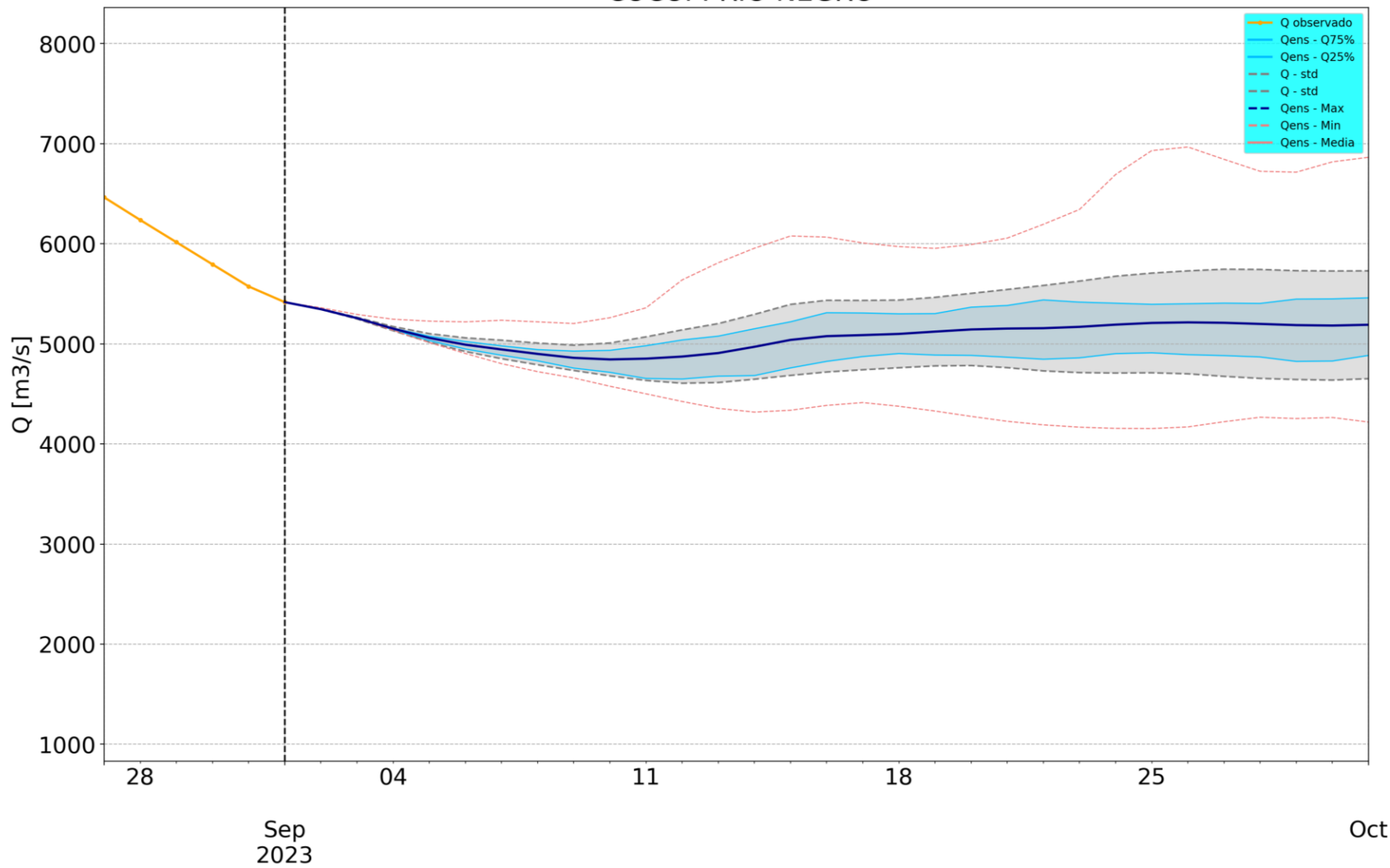
Previsão de vazão realizada por meio do Modelo Hidrológico Distribuído – **Lisflood/GLOFAS** (Chuva-Vazão), usando como entradas as previsões de precipitação fornecidas pelo modelo por conjunto **ECMWF** (Centro Europeu)



Previsão: 01/09/2023

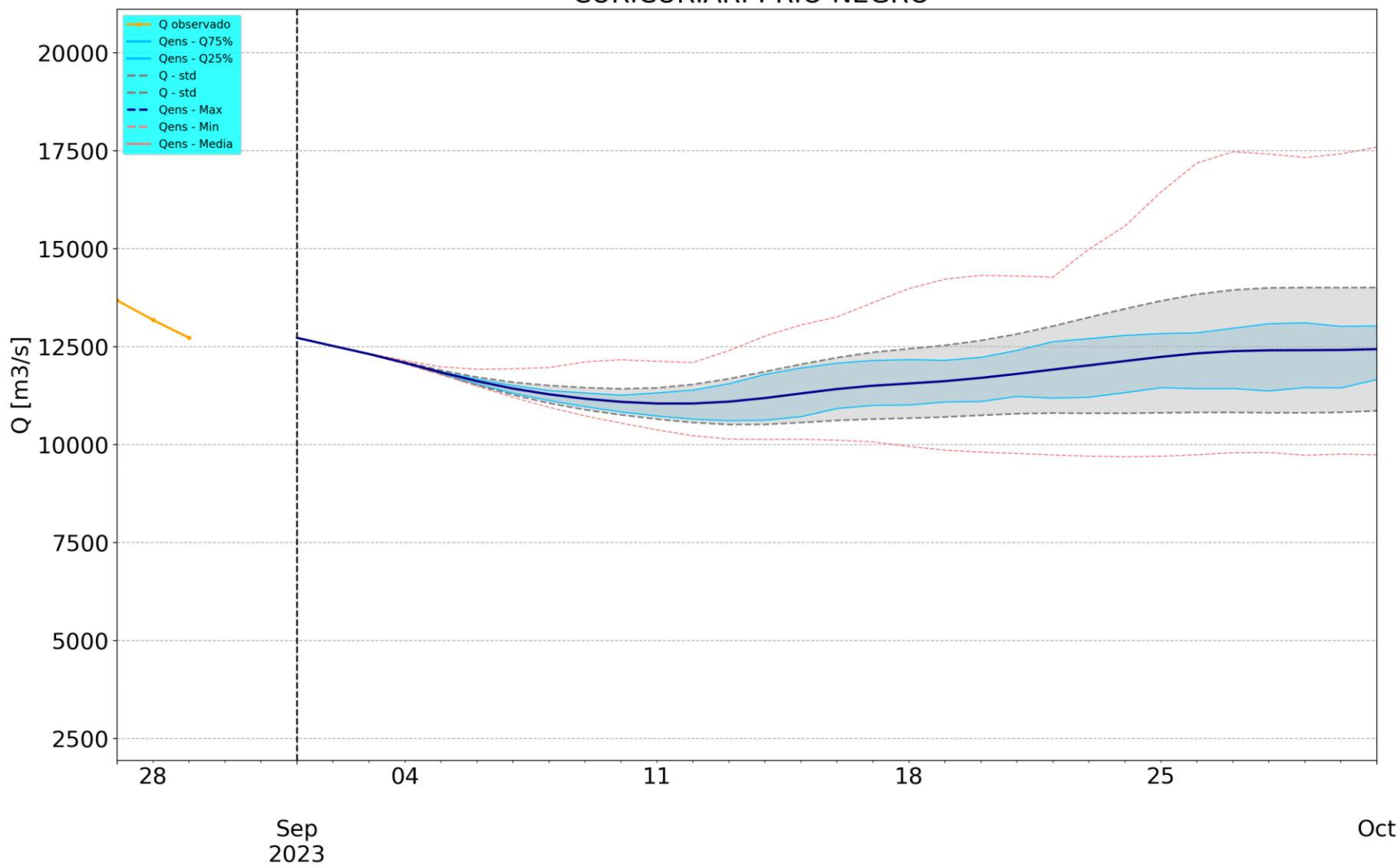
Model Run - 2023-09-01

CUCUI : RIO NEGRO

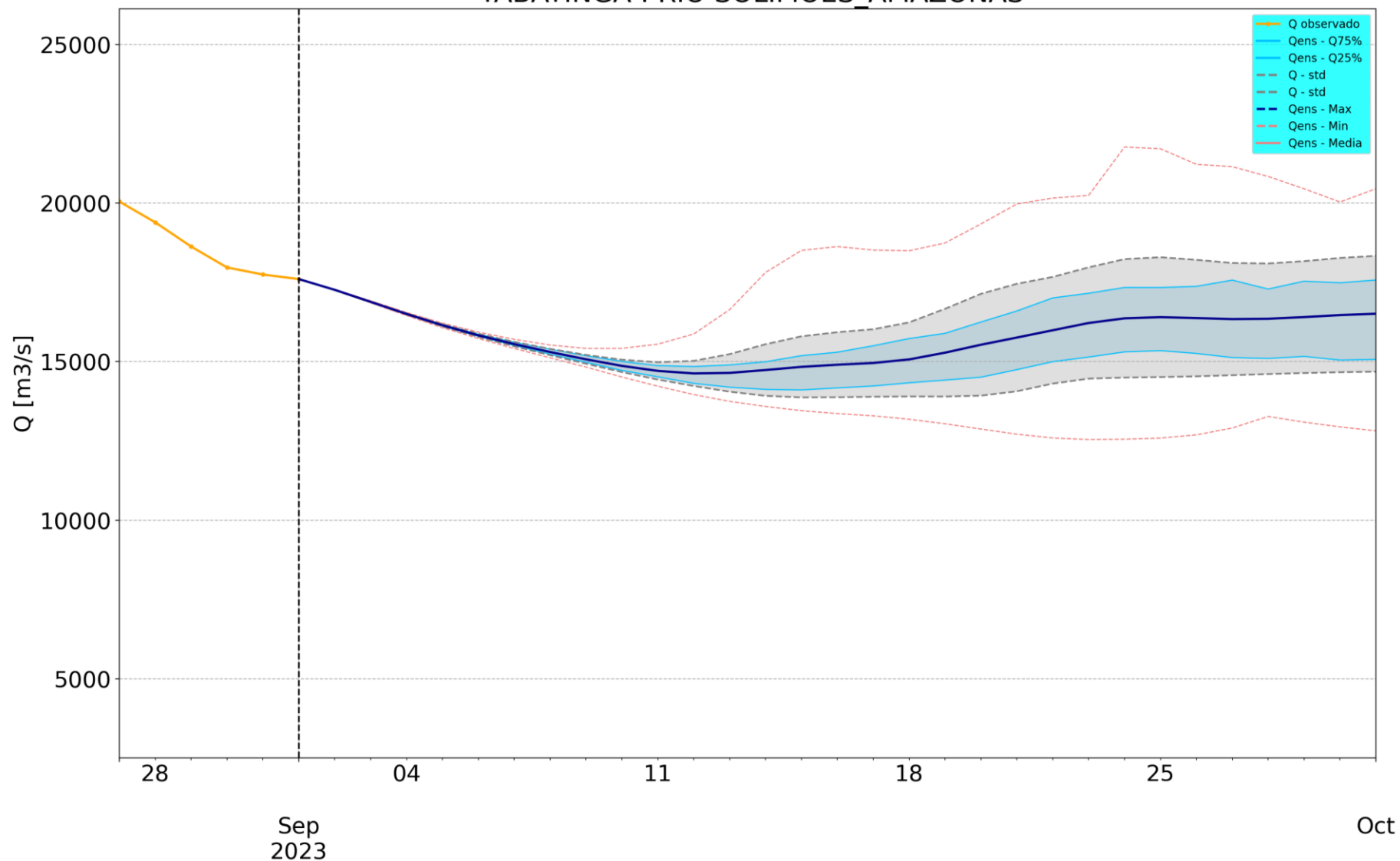


Previsão: 01/09/2023

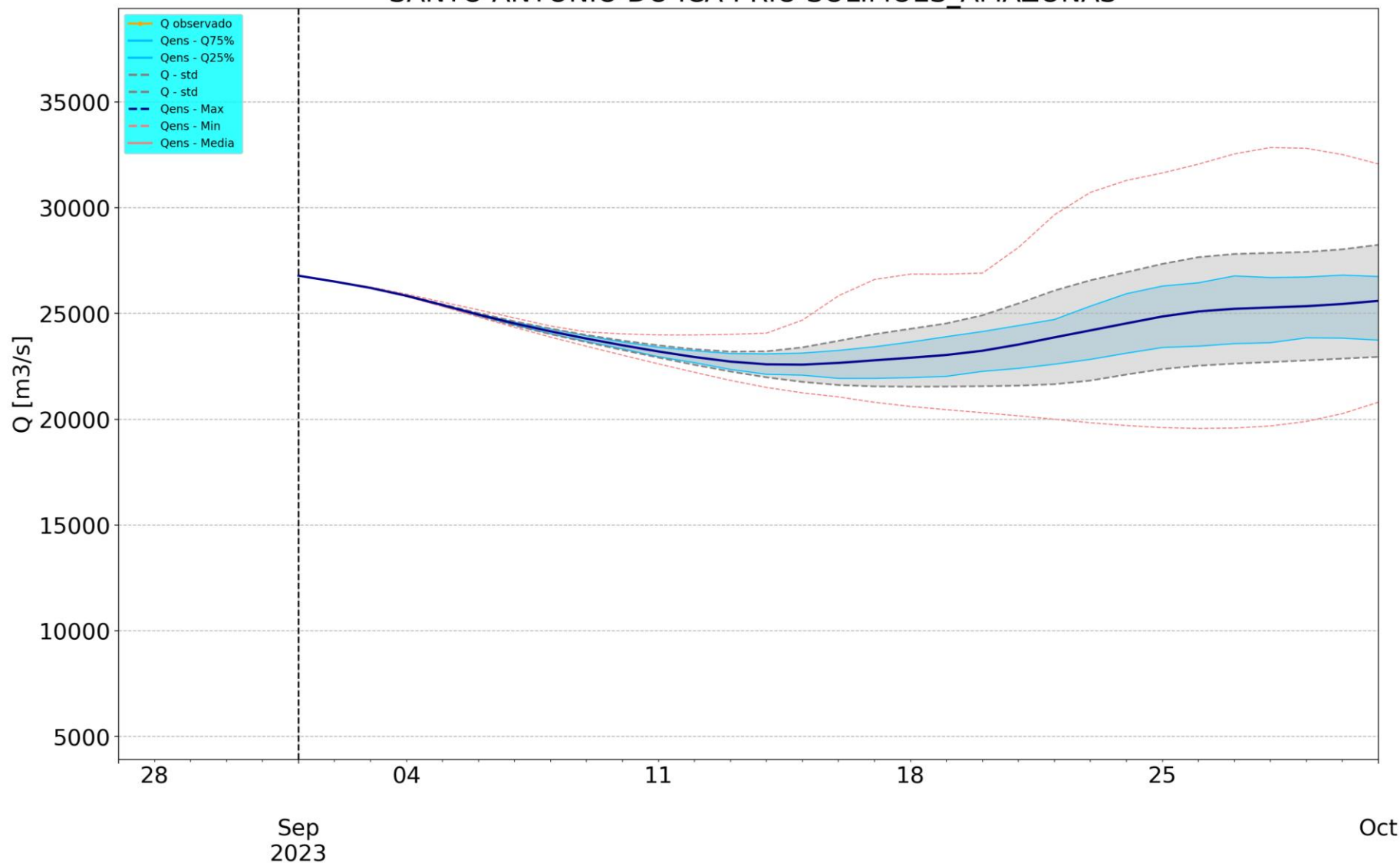
Model Run - 2023-09-01
CURICURIARI : RIO NEGRO



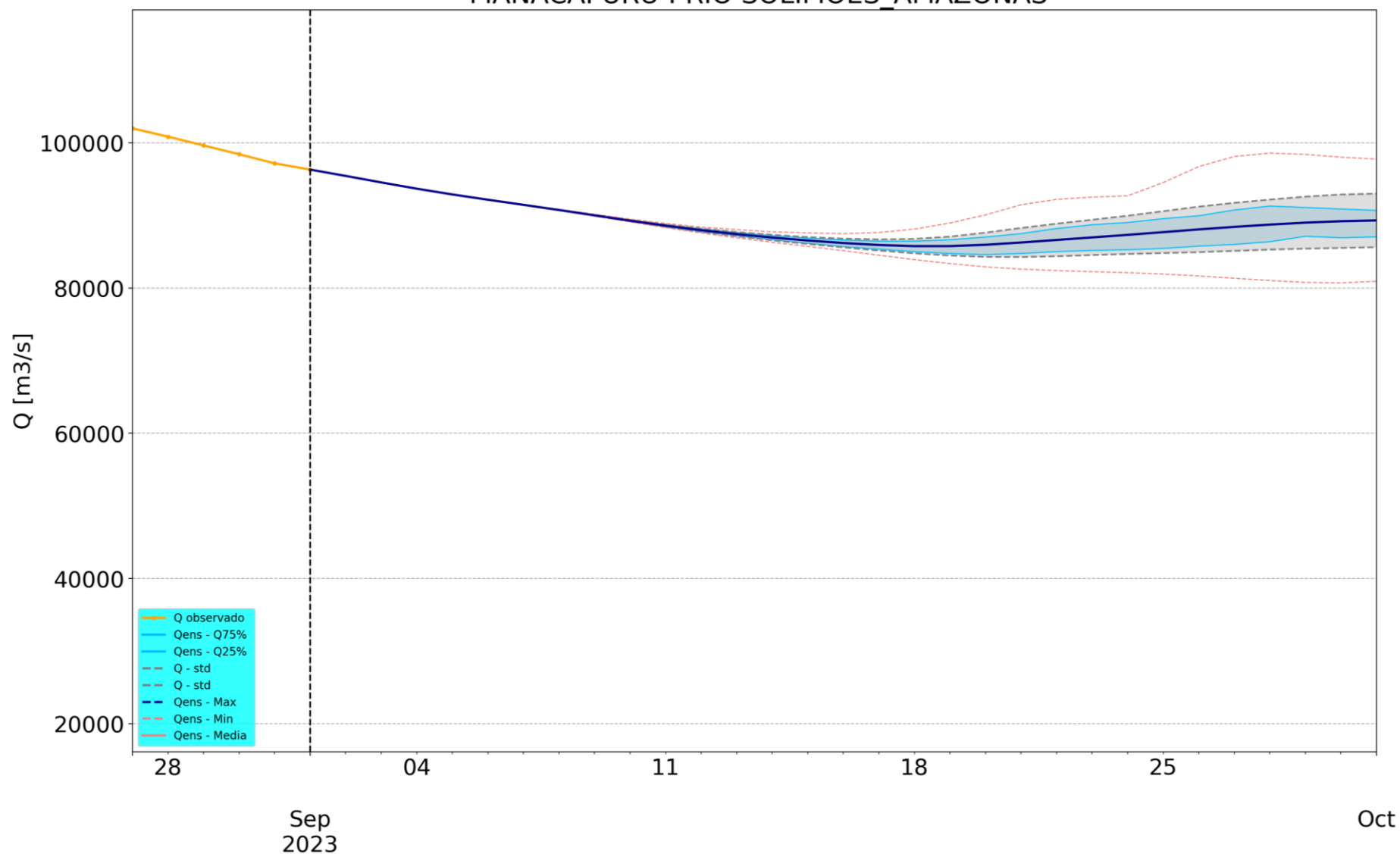
Model Run - 2023-09-01
TABATINGA : RIO SOLIMÕES AMAZONAS



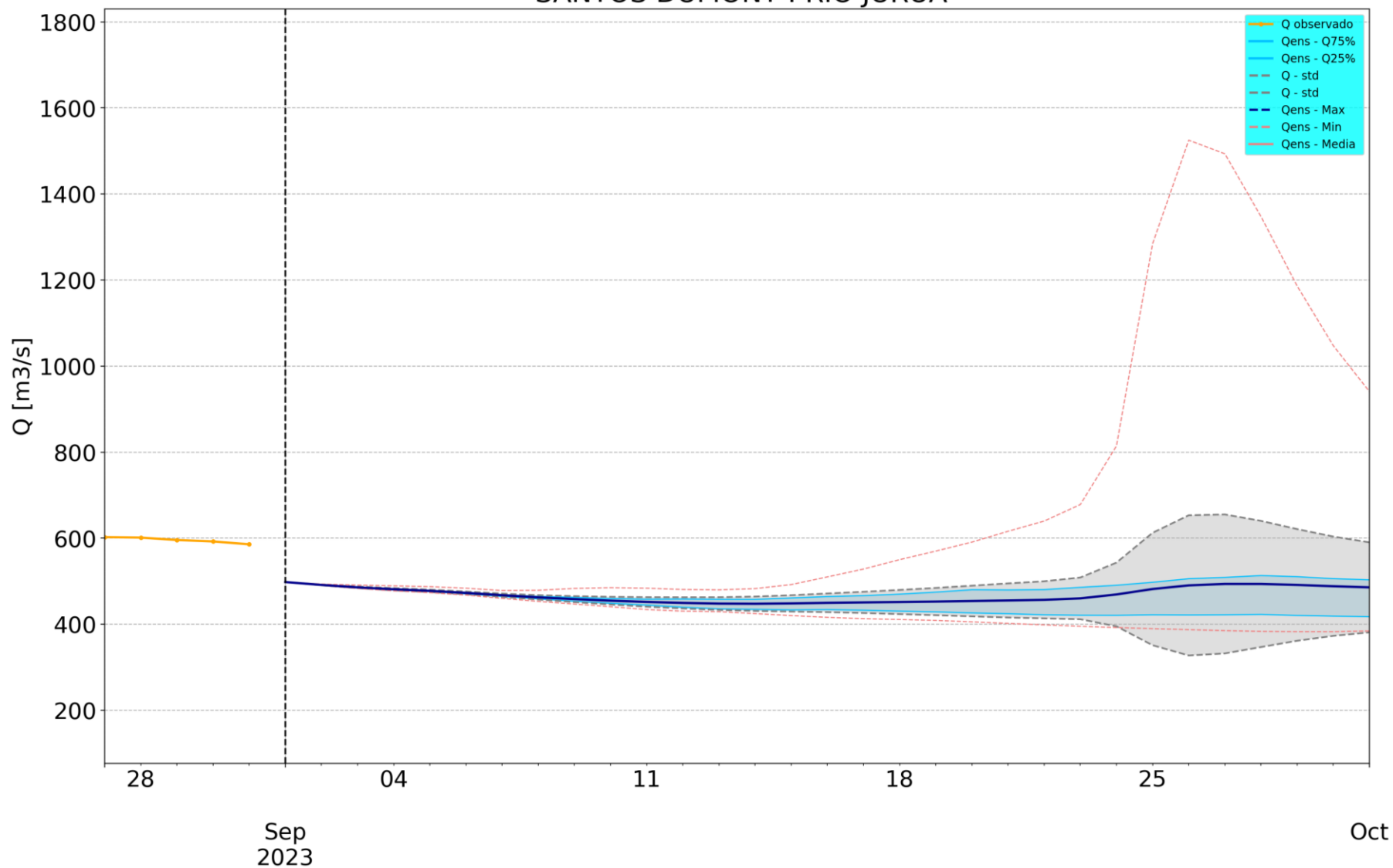
Model Run - 2023-09-01
SANTO ANTONIO DO ICA : RIO SOLIMÕES AMAZONAS



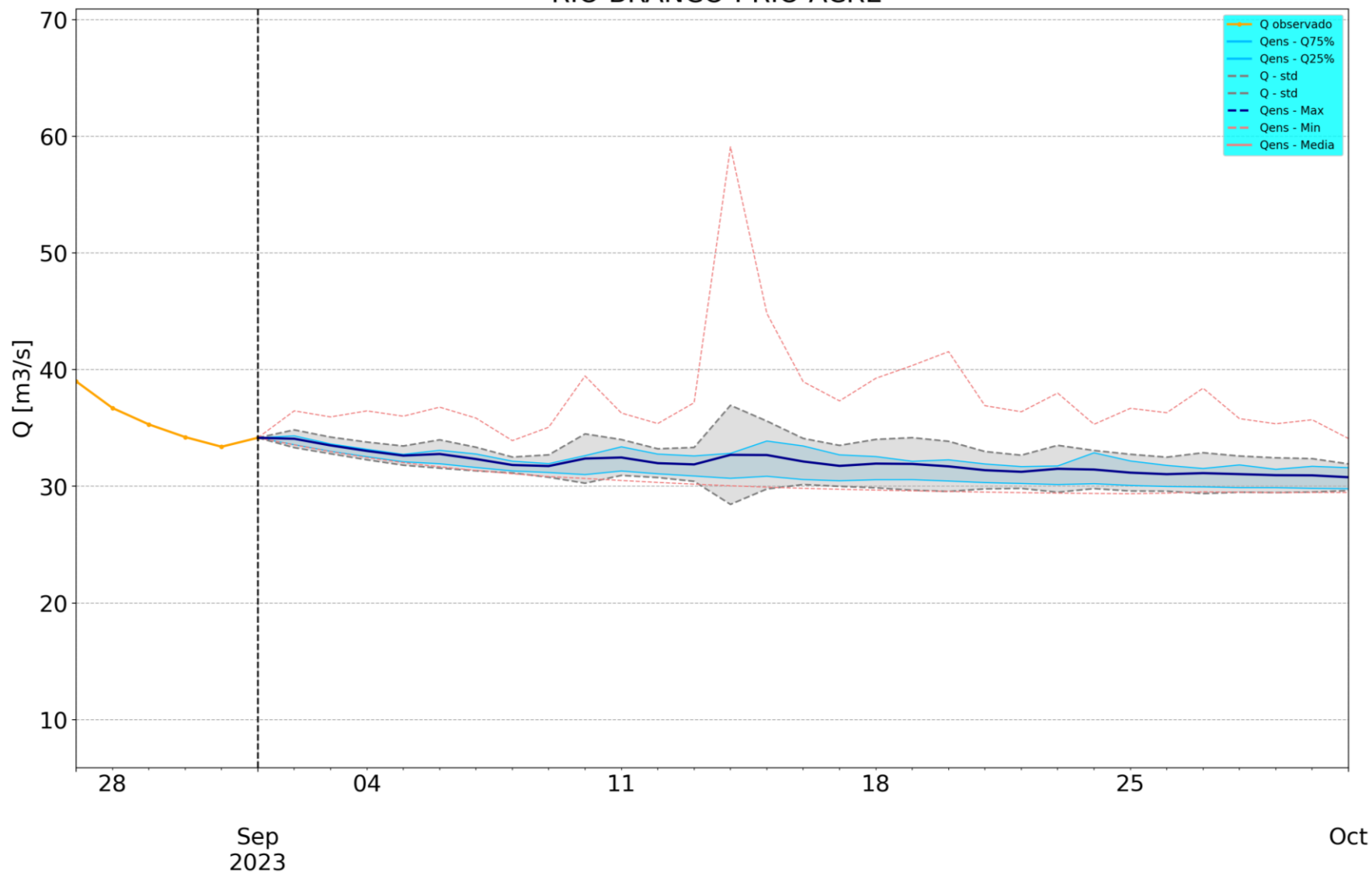
Model Run - 2023-09-01
MANACAPURU : RIO SOLIMÕES AMAZONAS



Model Run - 2023-09-01
SANTOS DUMONT : RIO JURUA



Model Run - 2023-09-01
RIO BRANCO : RIO ACRE



The graph displays the daily discharge (Q) in m³/s for the Rio Mamore. The Y-axis ranges from 250 to 2000 m³/s. The X-axis shows dates from Sep 28 to Oct 3, 2023. A vertical dashed line at Sep 30 indicates the transition from observed data to model simulation.

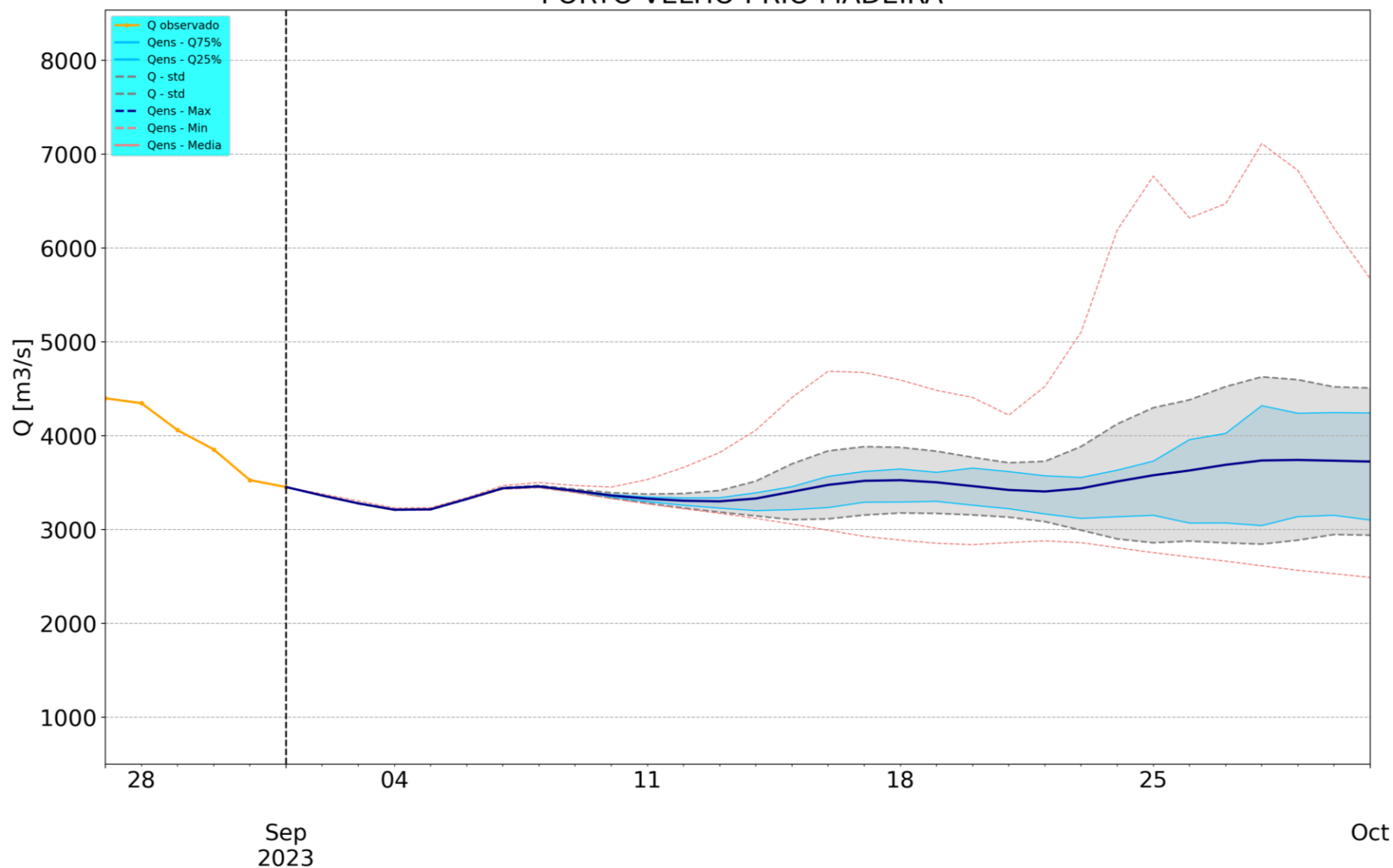
Legend:

- Q observado (Orange solid line with markers)
- Qens - Q75% (Light blue solid line)
- Qens - Q25% (Dark blue solid line)
- Q - std (Gray dashed line)
- Q - std (Gray dashed line)
- Qens - Max (Dark blue dashed line)
- Qens - Min (Dark blue dashed line)
- Qens - Media (Red dashed line)

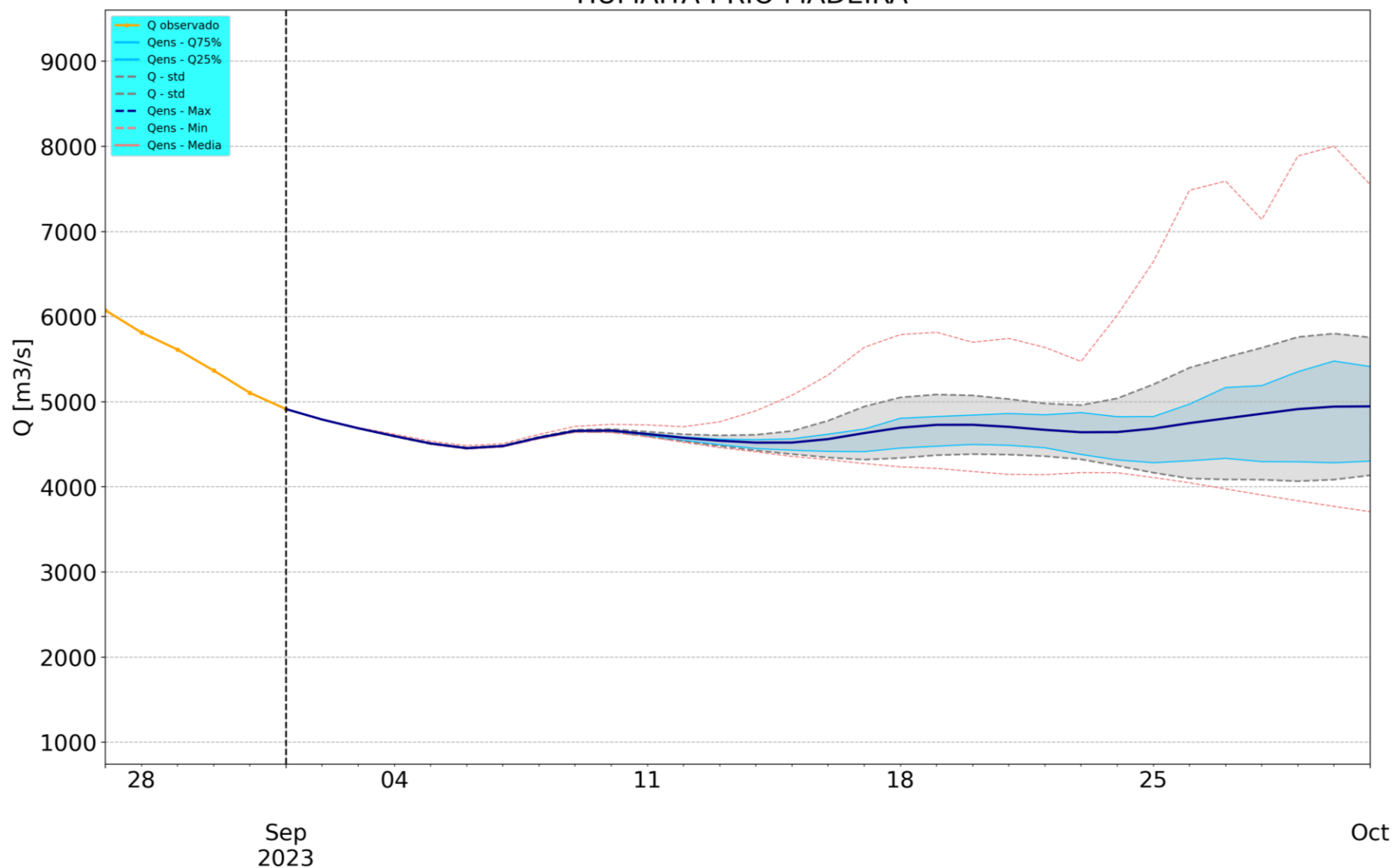
Approximate Data Points:

Date	Q observado (m³/s)	Qens - Media (m³/s)	Qens - Max (m³/s)	Qens - Min (m³/s)
Sep 28	1550	-	-	-
Sep 29	1400	-	-	-
Sep 30	1250	1250	1250	1250
Sep 31	-	1150	1100	1050
Oct 01	-	1100	1050	1000
Oct 02	-	1050	1000	950
Oct 03	-	1000	950	900

Model Run - 2023-09-01
PORTO VELHO : RIO MADEIRA



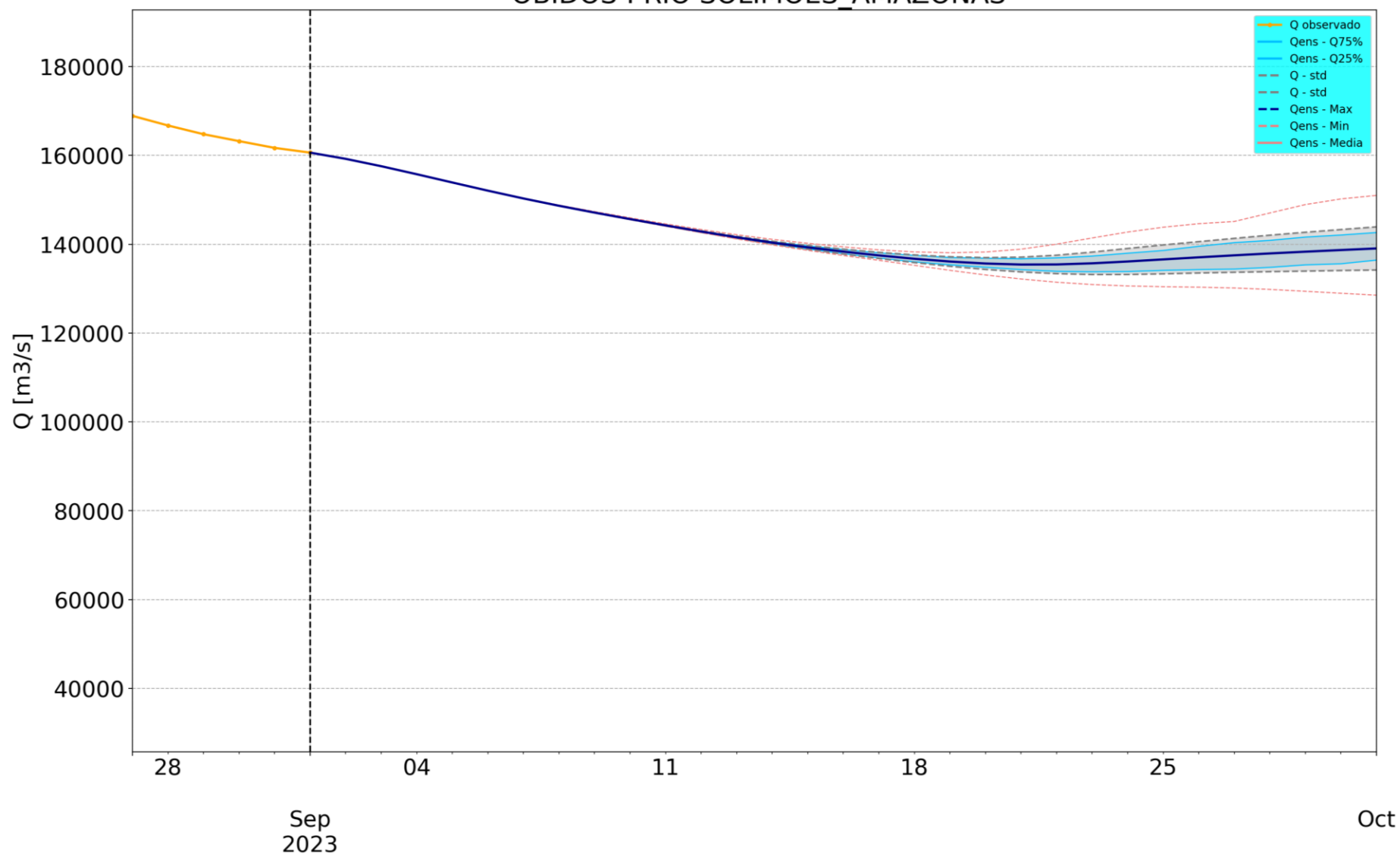
Model Run - 2023-09-01
HUMAITA : RIO MADEIRA



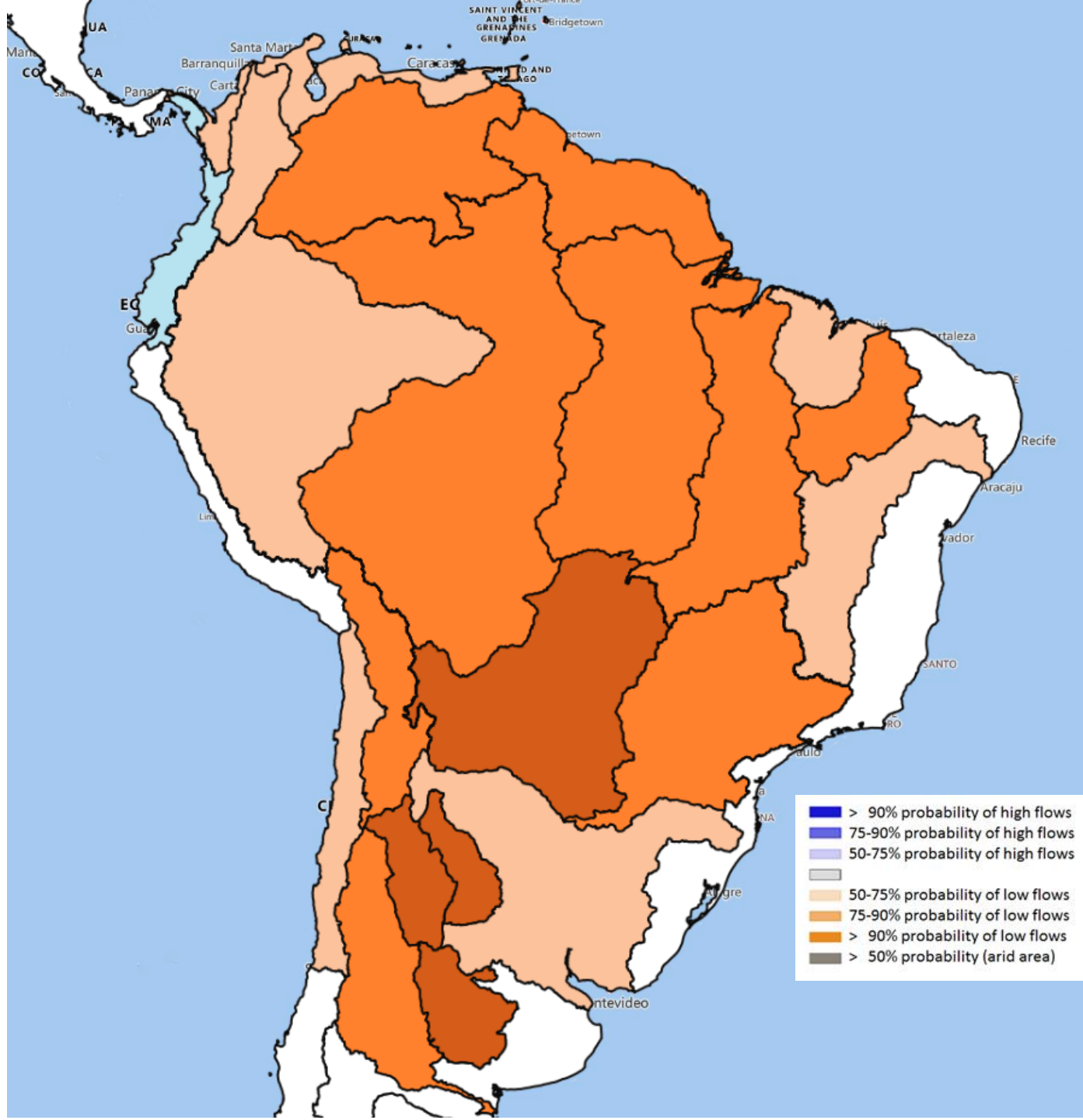
The graph displays the flow rate Q in m^3/s over time. The observed data (orange line with markers) is only available for the first few days of the period. The model (dark blue line) shows a steady decline from Sep 28 to Sep 30, followed by a slight increase and then a gradual decline towards Oct 3. The uncertainty bounds (light blue shaded area) are wider in the latter part of the period, indicating greater model uncertainty. A vertical dashed line at Sep 30 separates the observed data from the model predictions.

Date	Q observado [m^3/s]	Qens - Media [m^3/s]	Q - std [m^3/s]	Q - Max [m^3/s]	Q - Min [m^3/s]
Sep 28	165000	165000	-	-	-
Sep 29	160000	160000	-	-	-
Sep 30	158000	158000	-	-	-
Sep 31	-	150000	145000	155000	140000
Oct 01	-	145000	140000	150000	135000
Oct 02	-	140000	135000	145000	130000
Oct 03	-	140000	135000	145000	130000

Model Run - 2023-09-01
OBIDOS : RIO SOLIMOES AMAZONAS



GloFAS
Seasonal
forecast
ASON

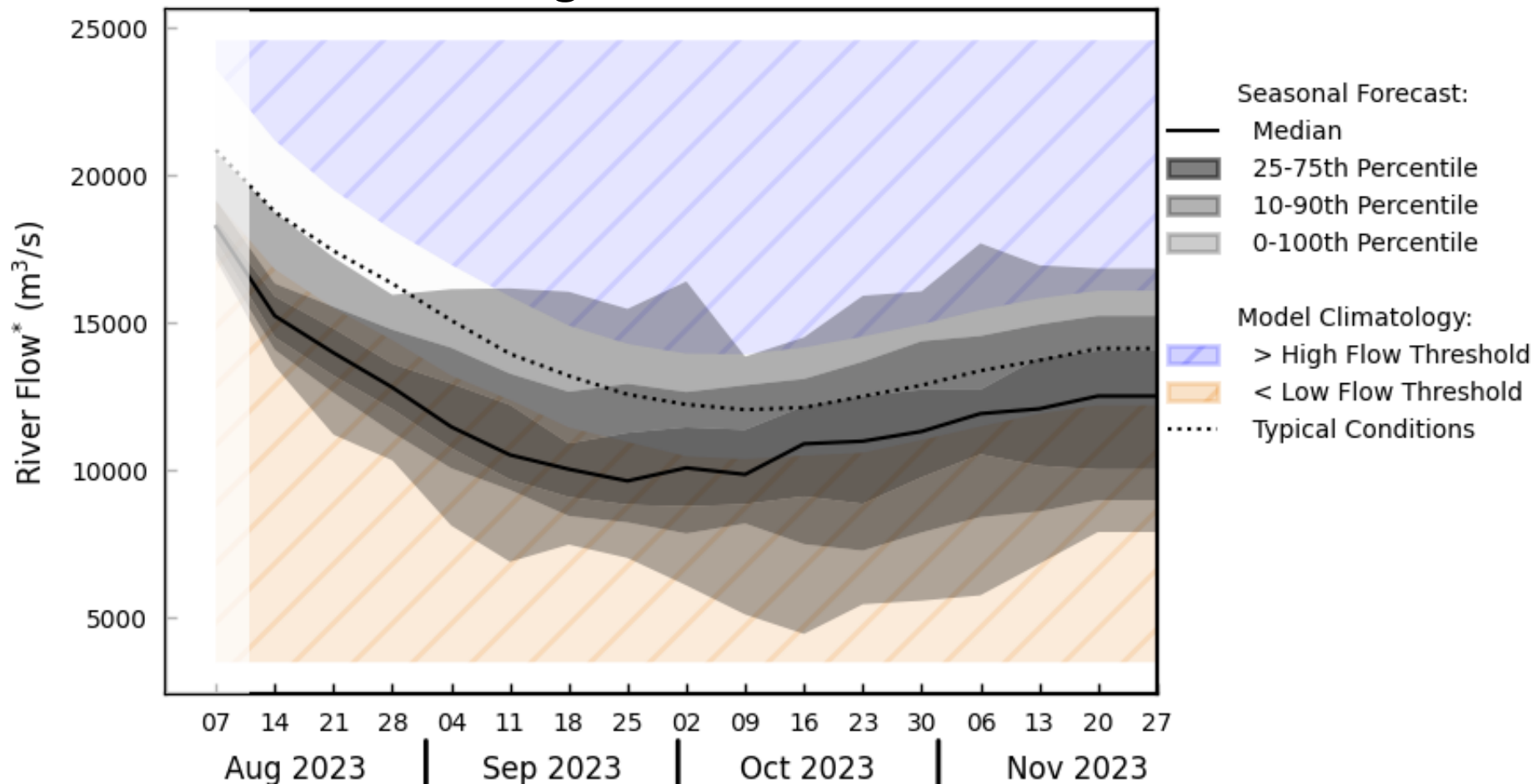


GloFAS Seasonal forecast **ASON**



Previsão Sazonal: SON

Serrinha – Rio Negro

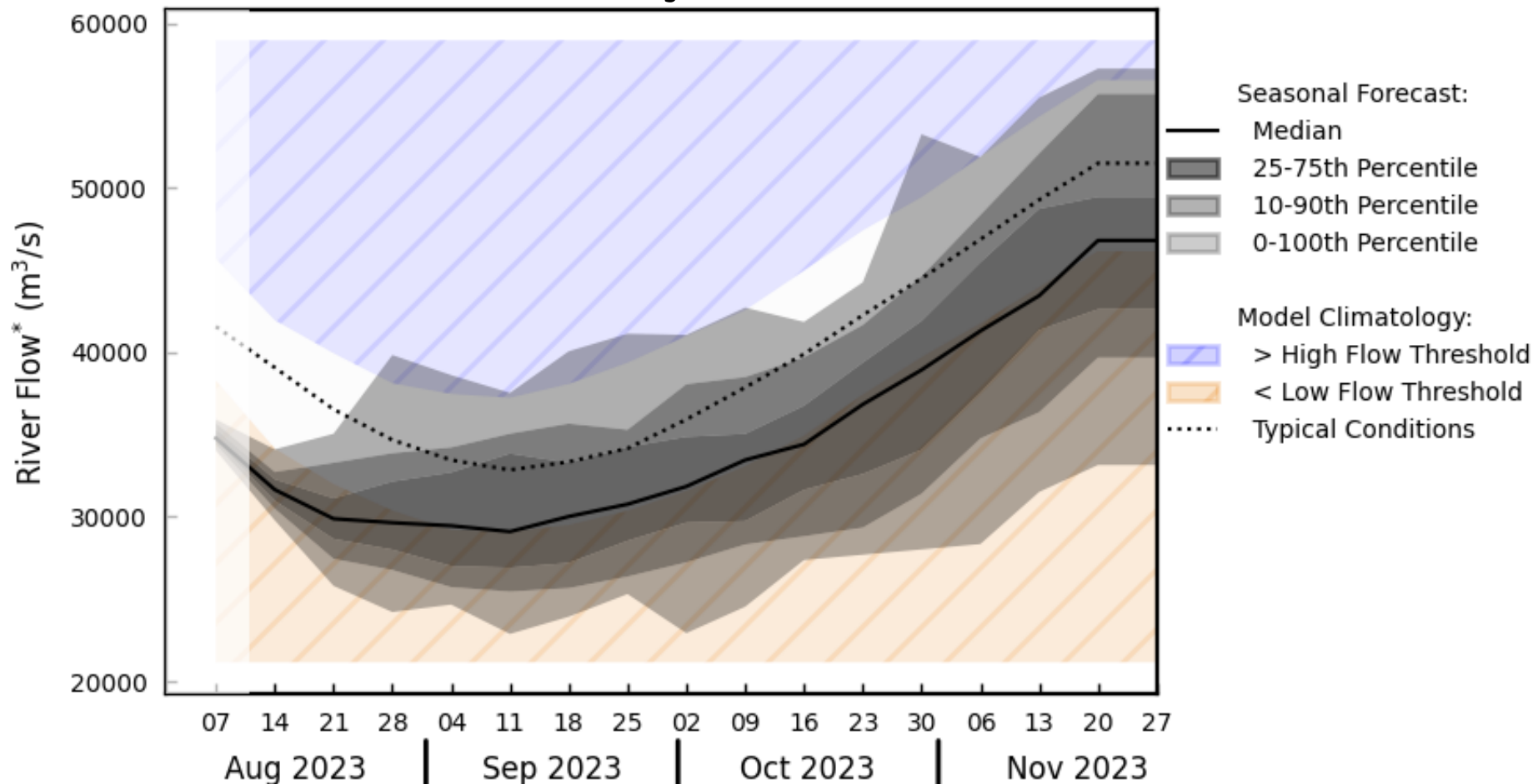


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Santo Antônio do Iça – Rio Solimões

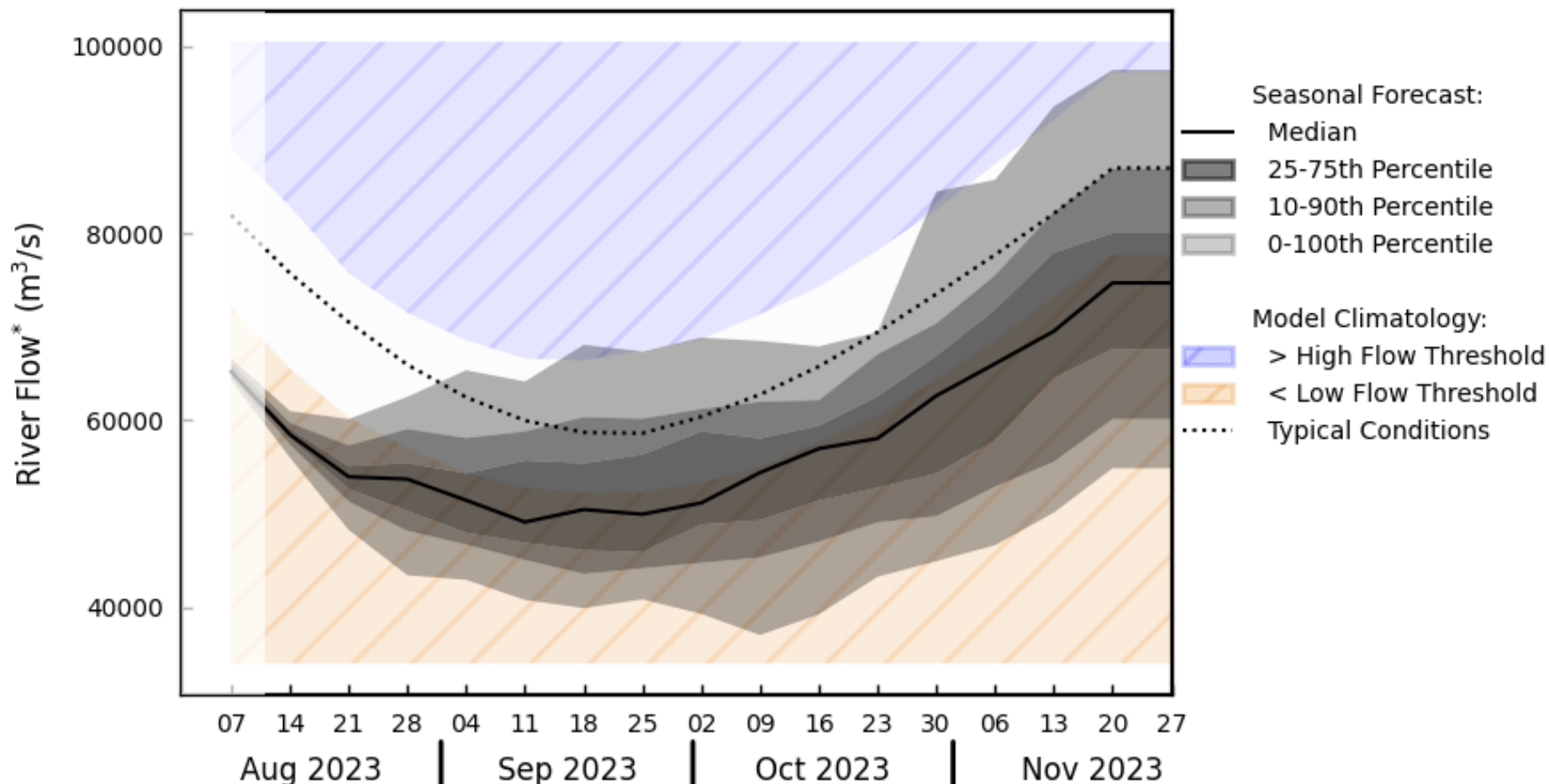


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Manacupuru– Rio Solimões

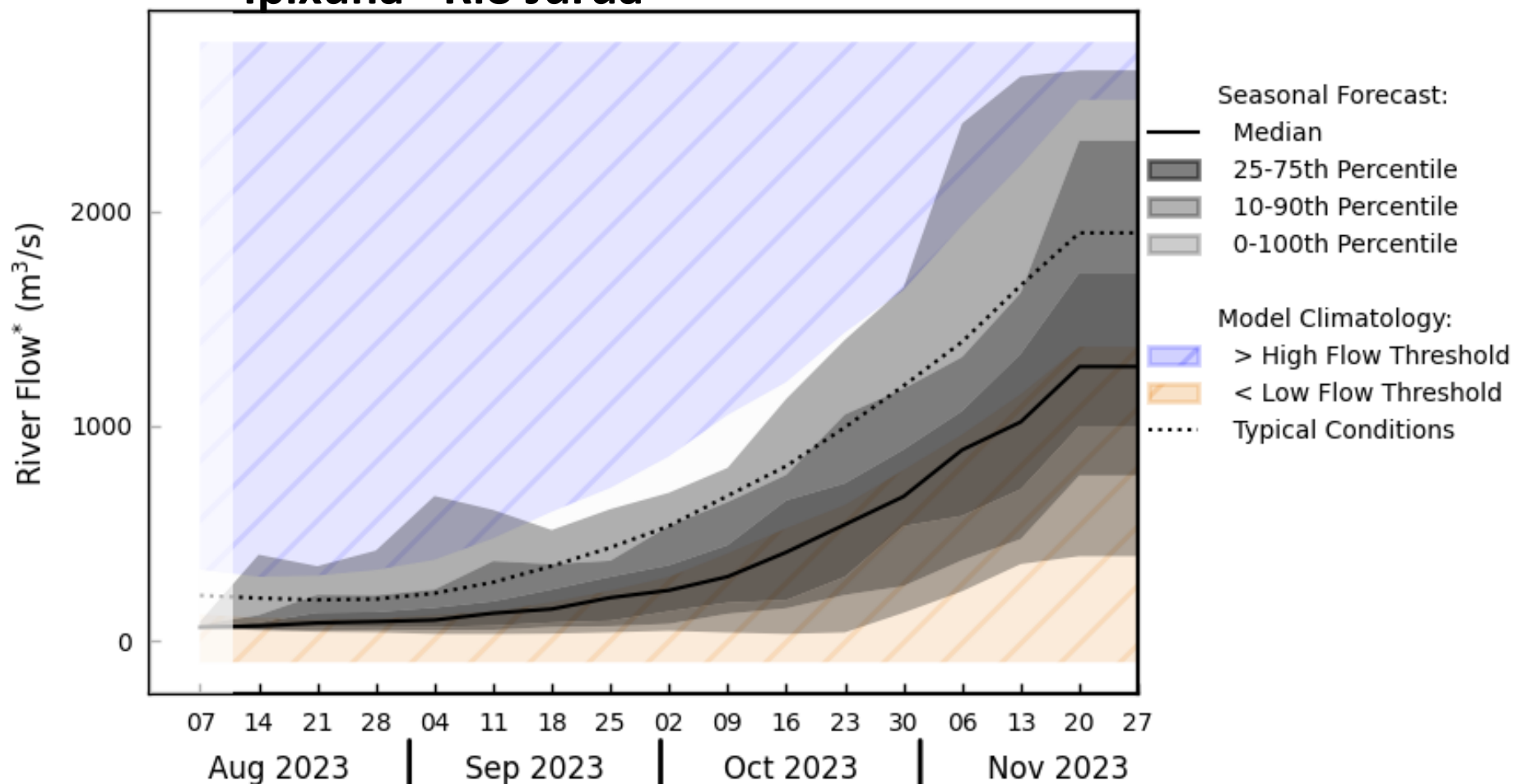


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Ipixuna– Rio Juruá

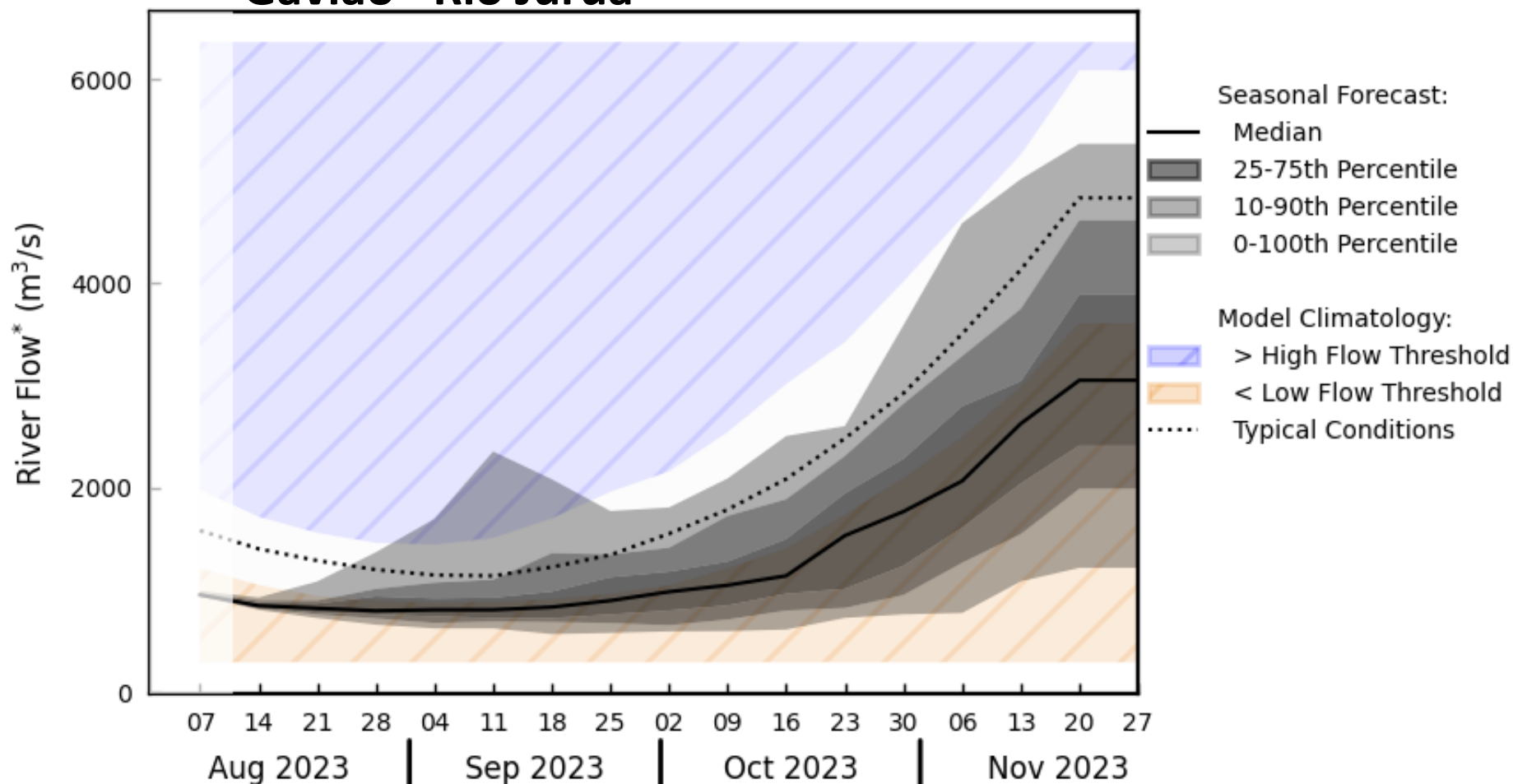


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Gavião– Rio Juruá

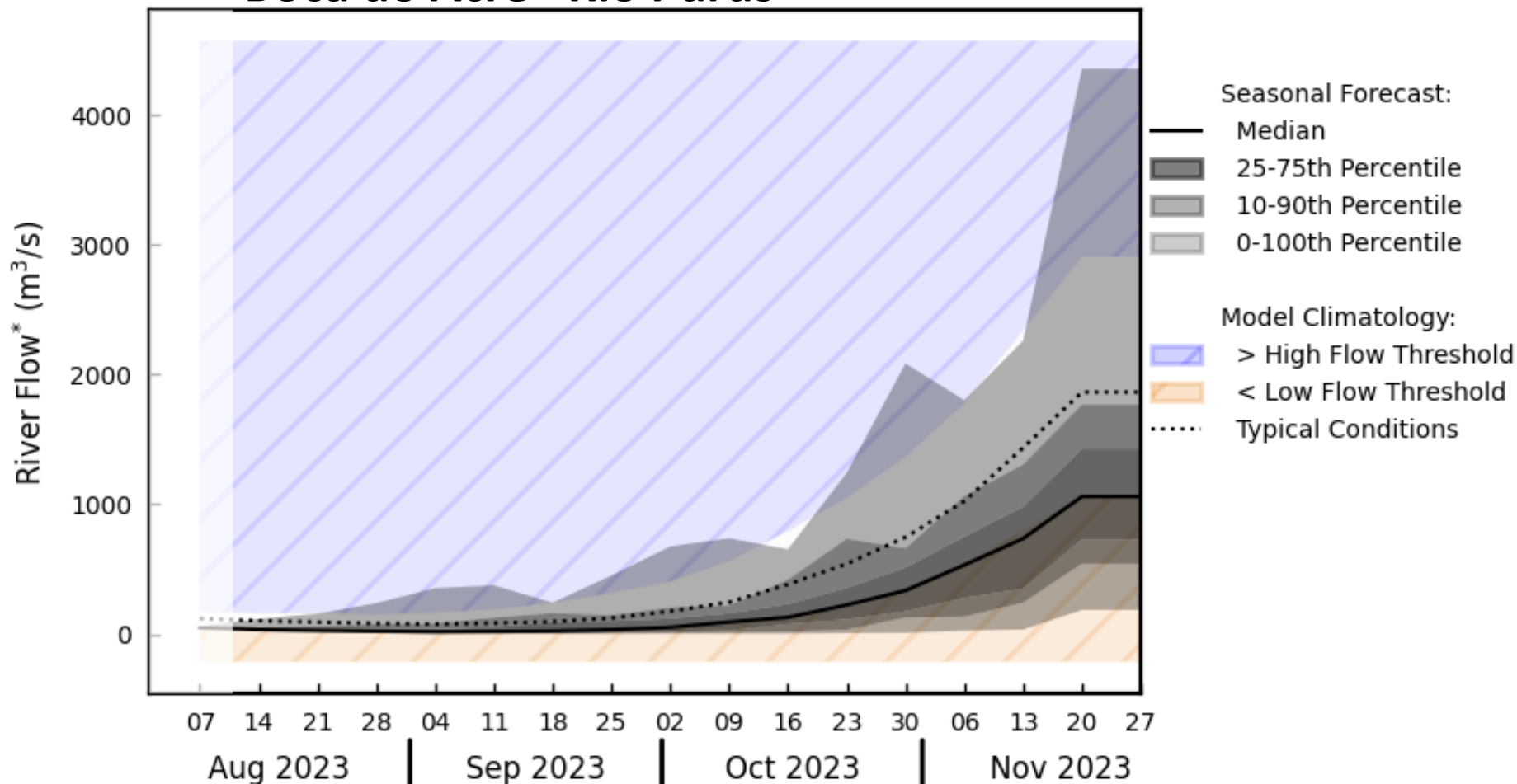


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Boca do Acre– Rio Purus

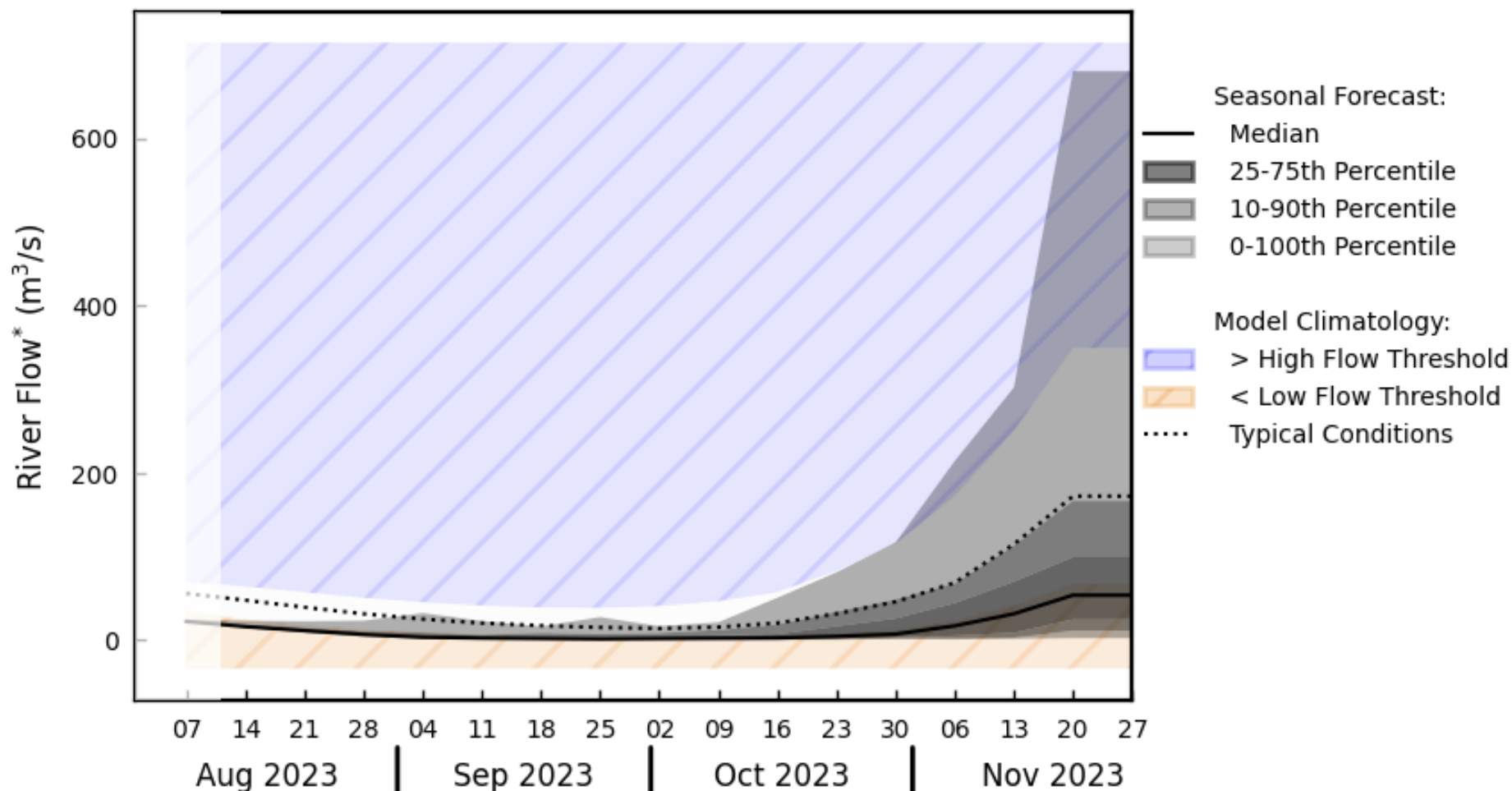


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Rio Branco – Rio Acre

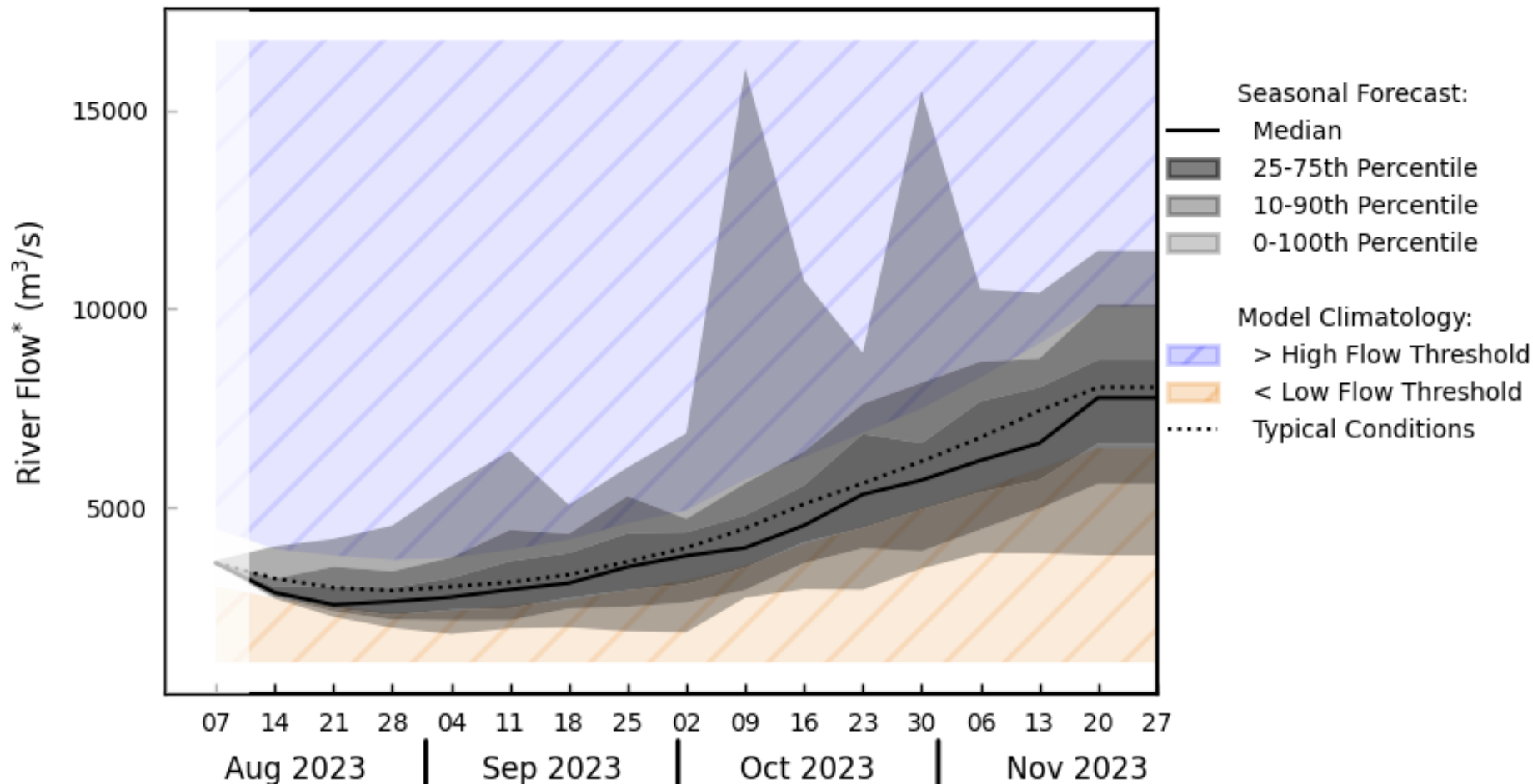


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Cachuela Esperanza – Rio Beni

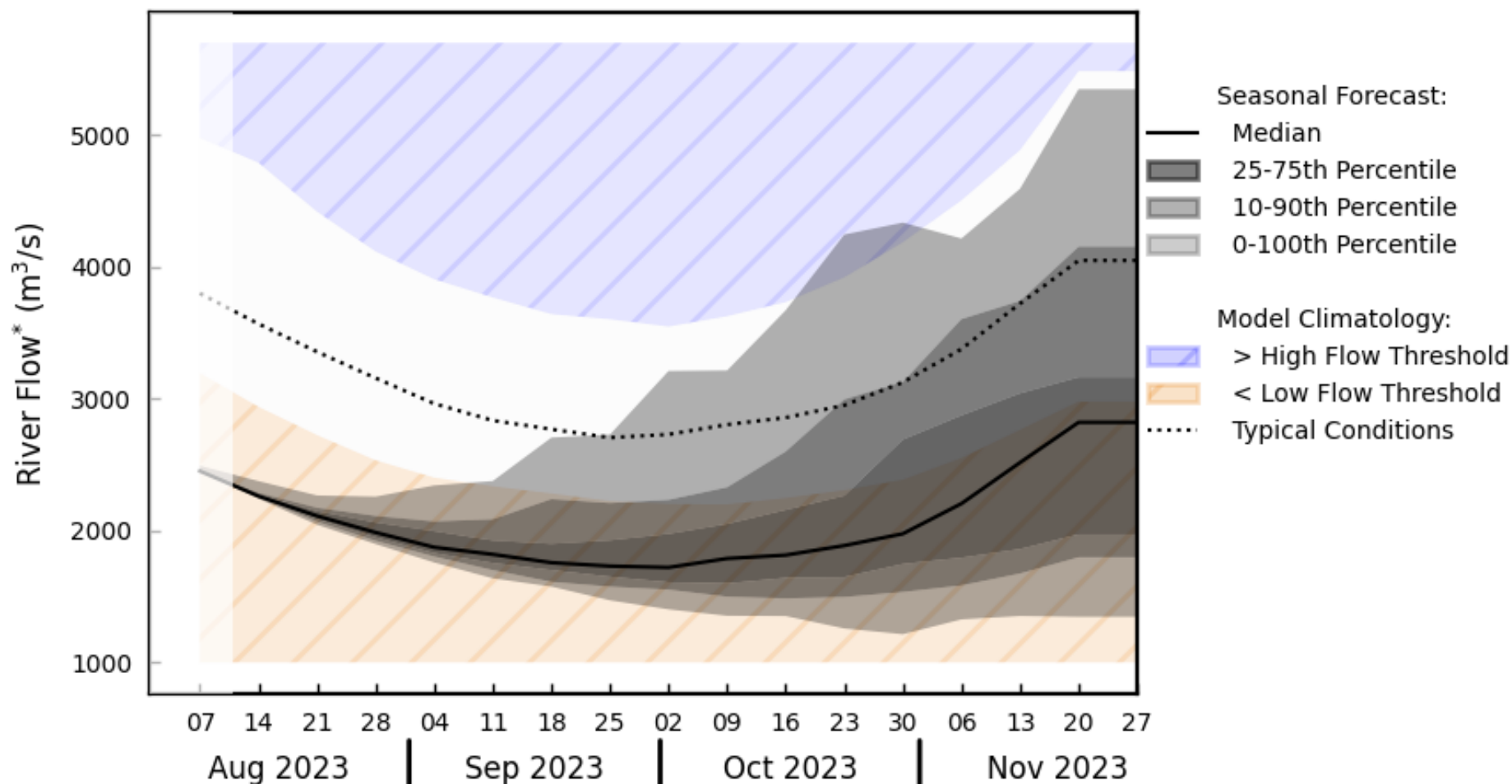


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Guajará-Mirim– Rio Mamoré

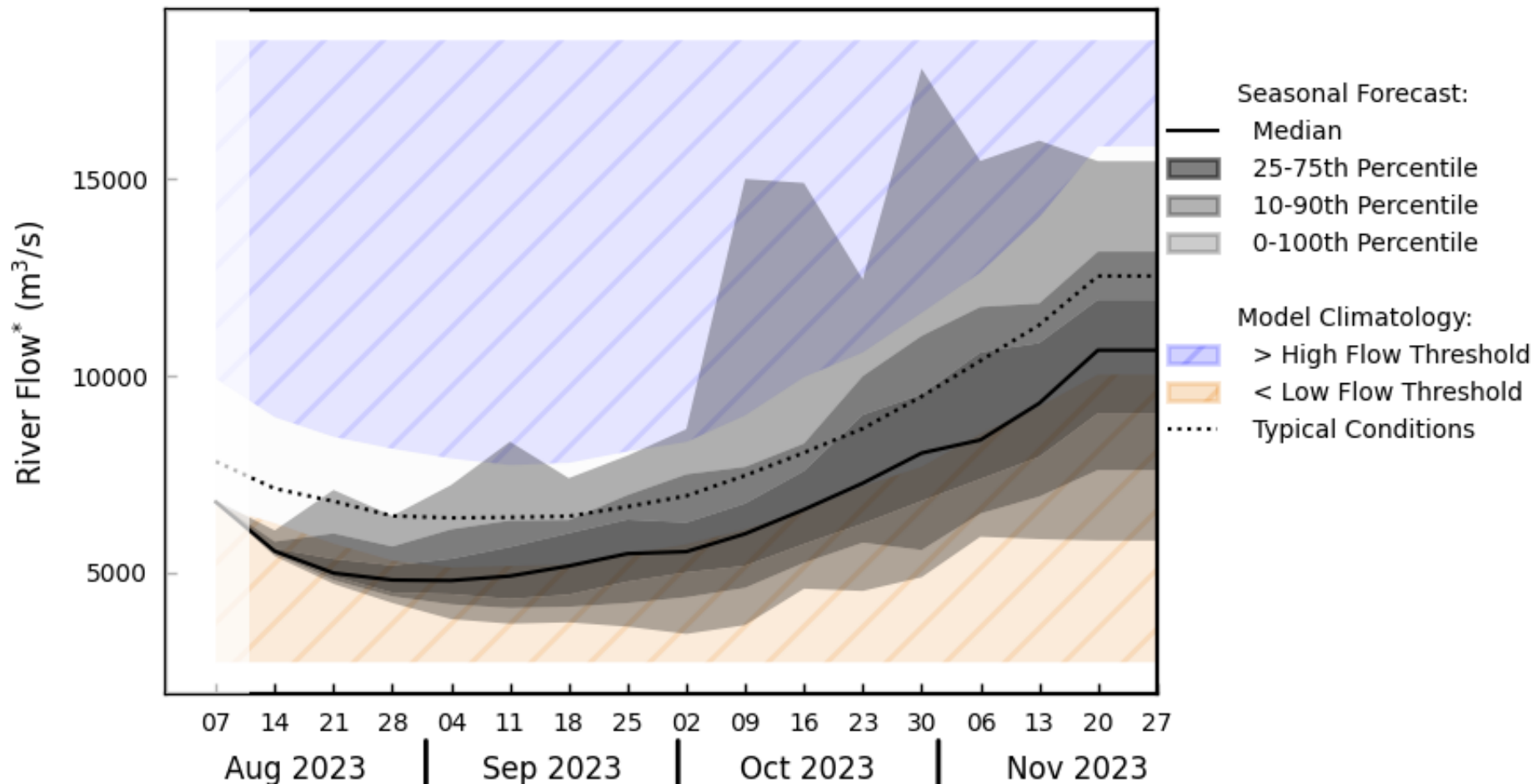


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Porto Velho– Rio Madeira

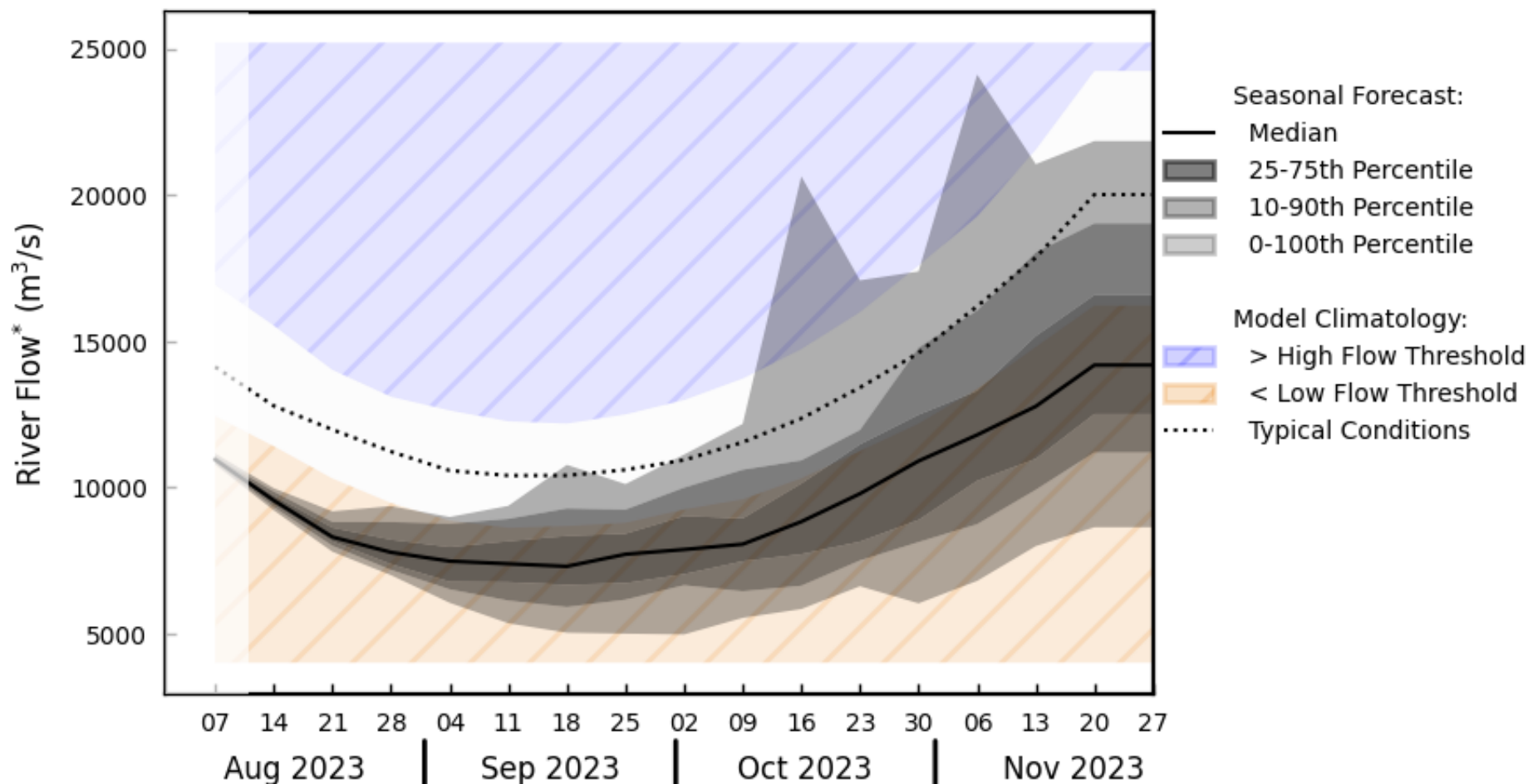


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Foz do Rio Madeira

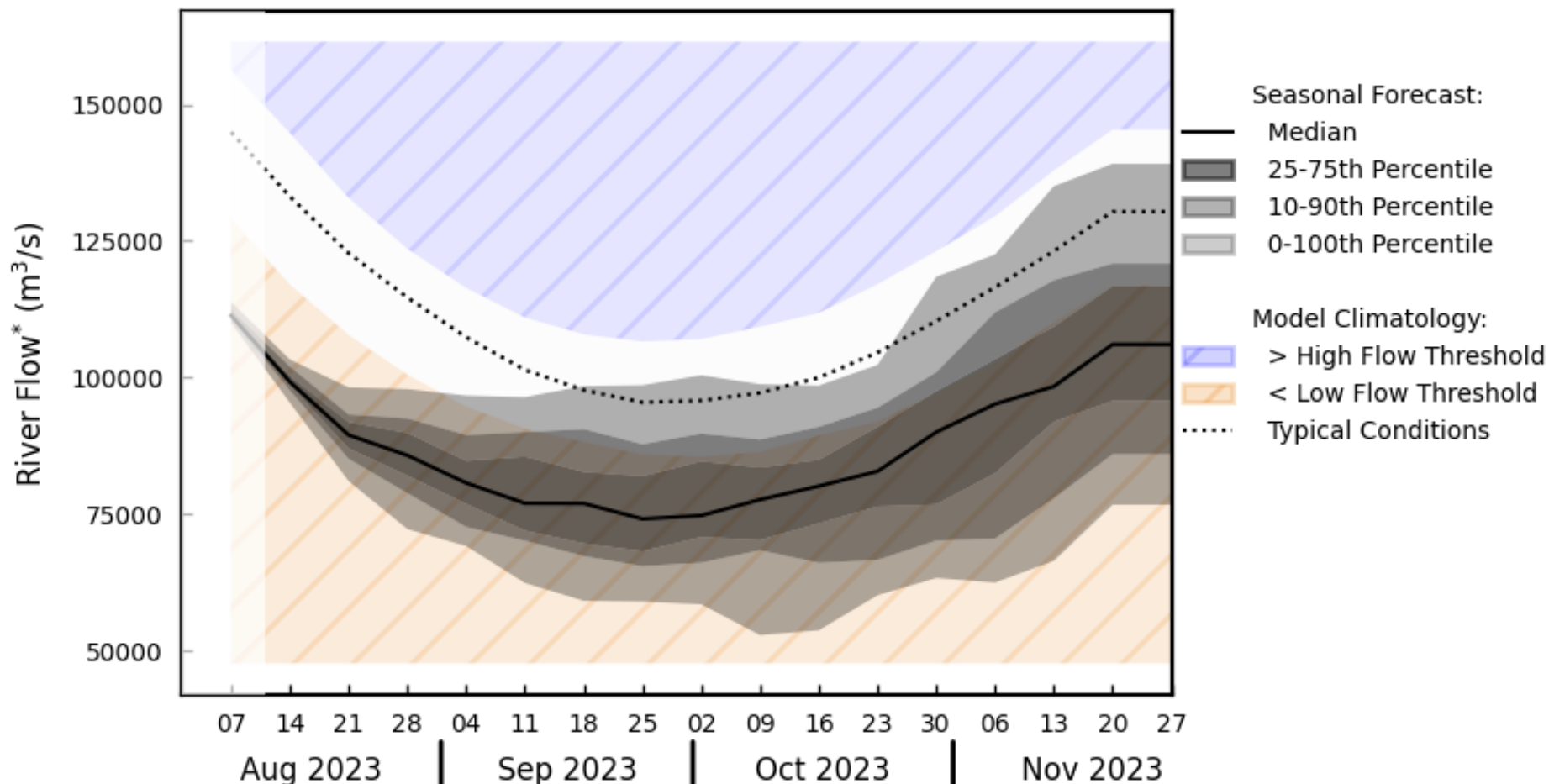


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Itacotiara – Rio Amazonas

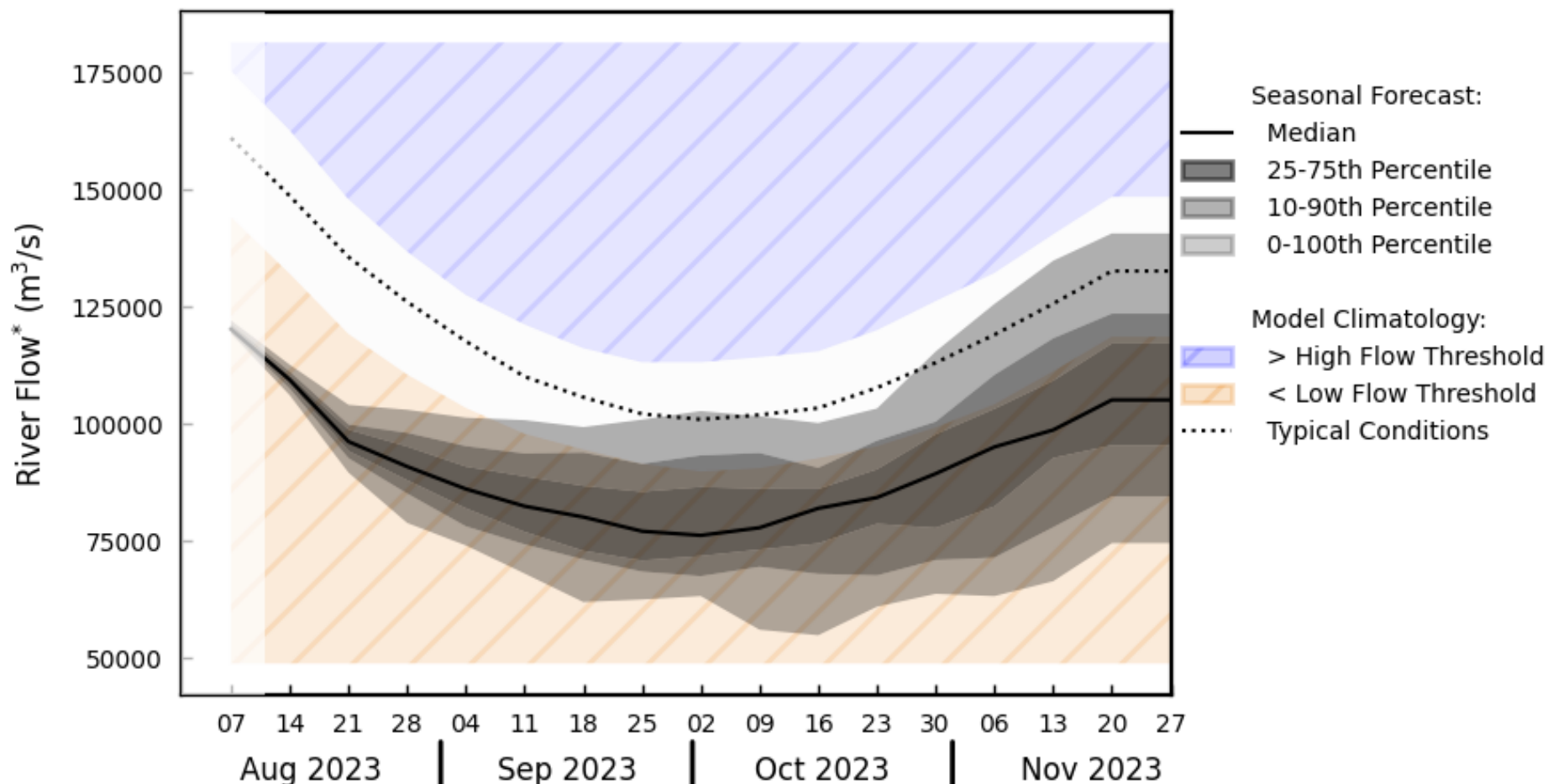


*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology

Previsão Sazonal: SON

Óbidos – Rio Amazonas



*River flow is a weekly average, displayed at start of week (dates shown)

** High and low flow thresholds refer to the 80th and 20th percentiles of the model climatology