Smallmouth Bass Updates

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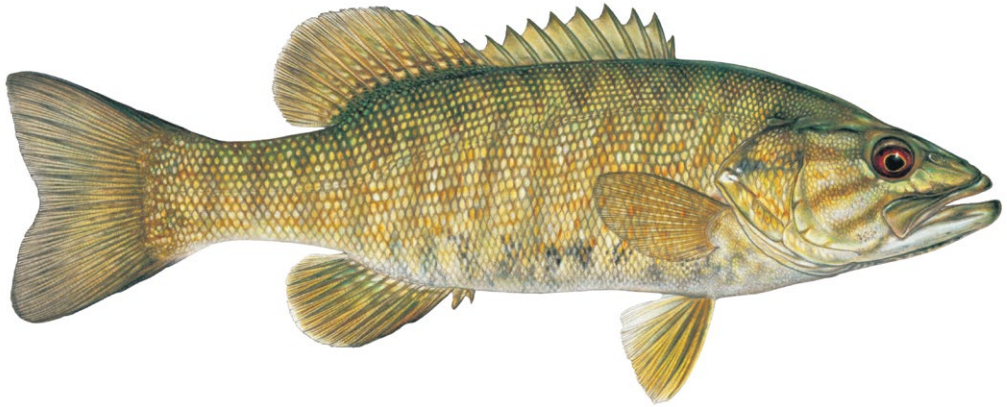
National Park Service



TWG
July 10, 2024

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NATIONAL PARK SERVICE

Acknowledgements

With lots of help

Including:
Charles Yackulic, Kim Dibble, Maria Dzul, Brian Healy, Tom Gushue, Eric Frye
Emily Omana Smith, Jeff Arnold, Conor Clancy, Kurt Shollenberger, Laura Tennant
Matt O'Neill, Bryce Mihalevich, Pilar Rinker
David Rogowski, Dale Fonken, John Fennell

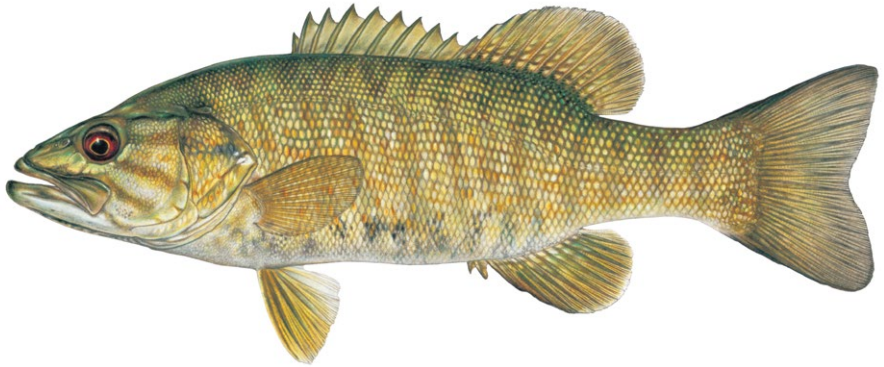
BUREAU OF
RECLAMATION

2024 Smallmouth Bass Captures (so far)

Total = 76

Lowest capture = RM 6.9

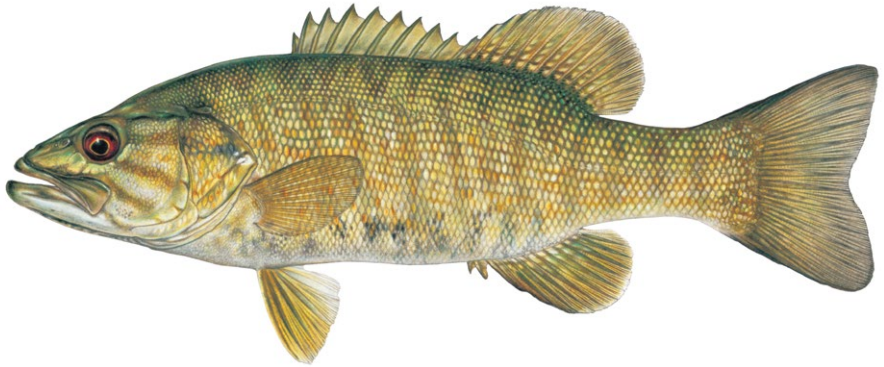
No age-0 fish captured



GSF: 5,004
WAL: 17

2024 Smallmouth Bass Captures (so far)

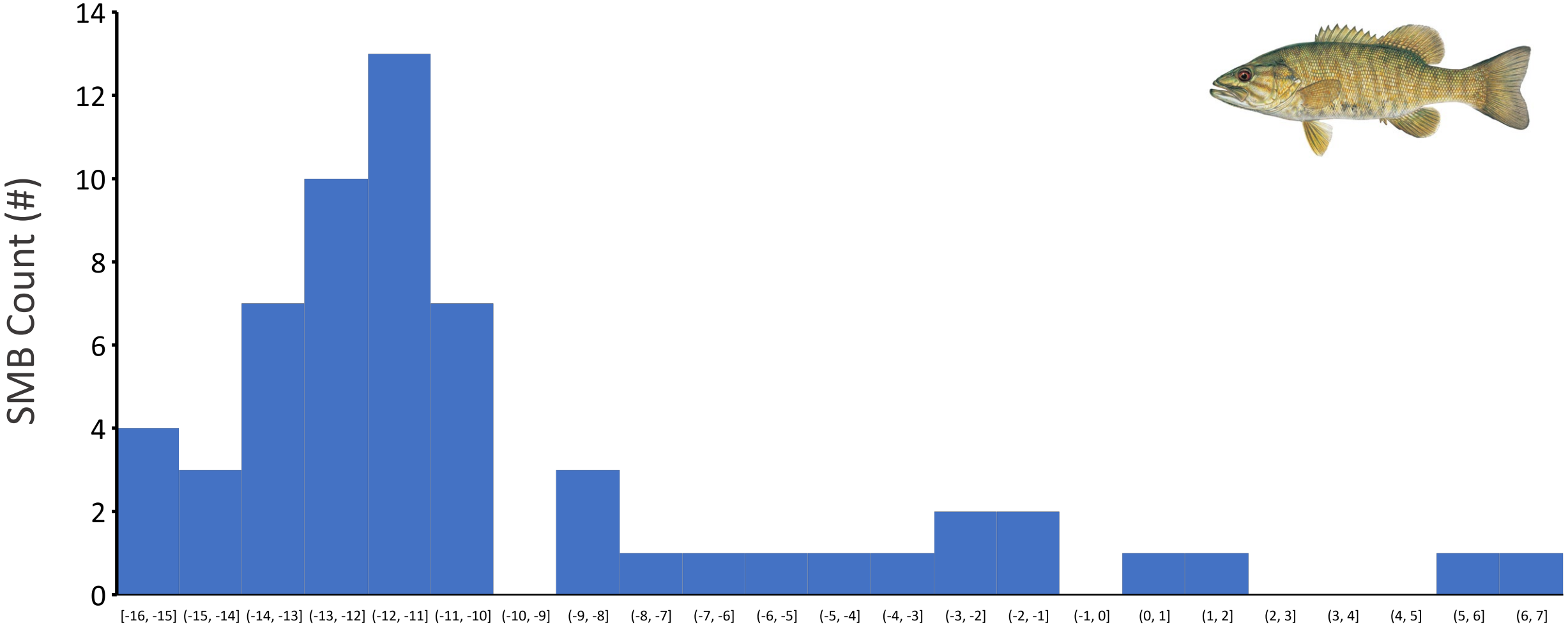
Total = 76



21% from routine, interagency monitoring

79% from targeted removal effort

2024 Smallmouth Bass Captures (so far)



*Spatial distribution of effort differs through time

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Preliminary Information-Subject to Revision. Not for Citation or Distribution

Figure: M. Trammell, NPS

2024 Smallmouth Bass Captures (so far)

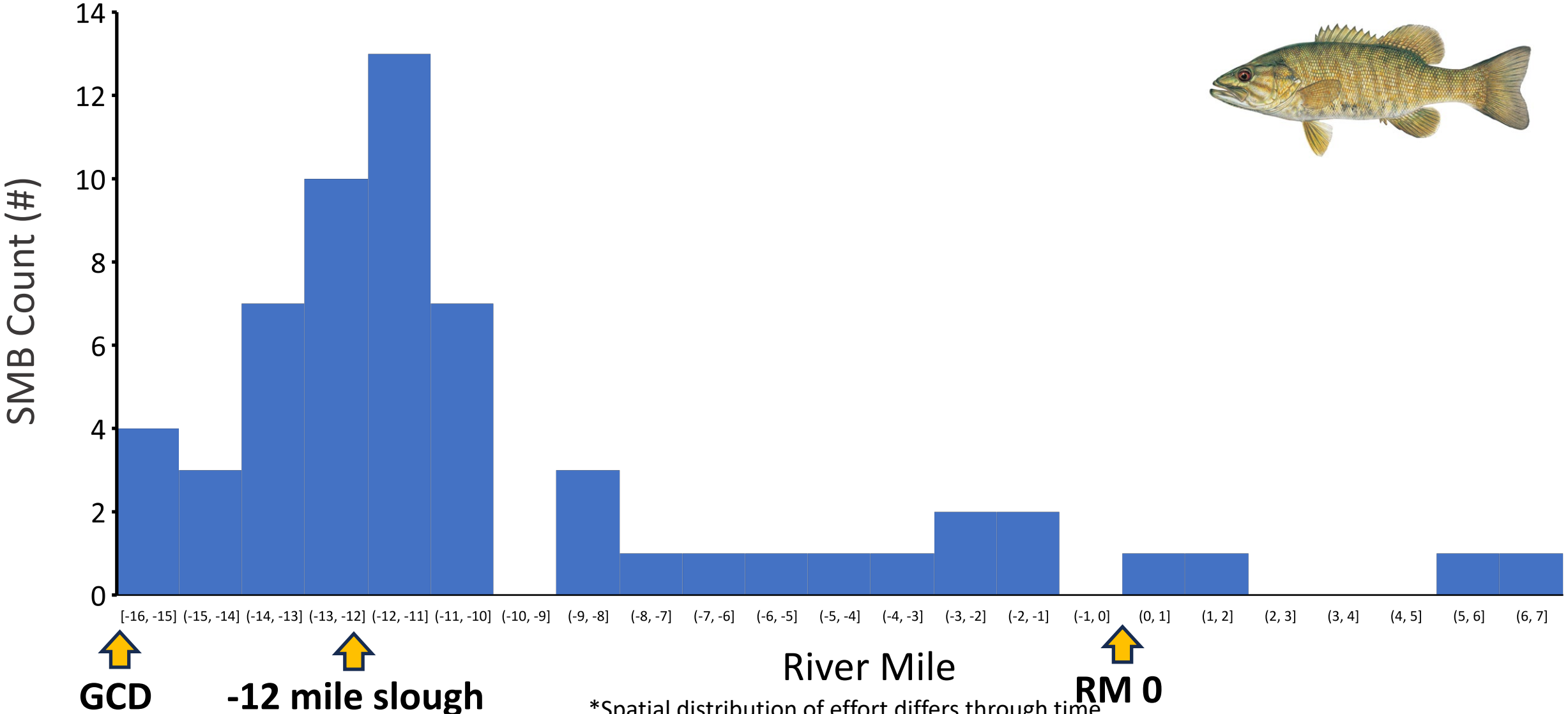

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Figure: M. Trammell, NPS

2024 Smallmouth Bass Captures (so far)

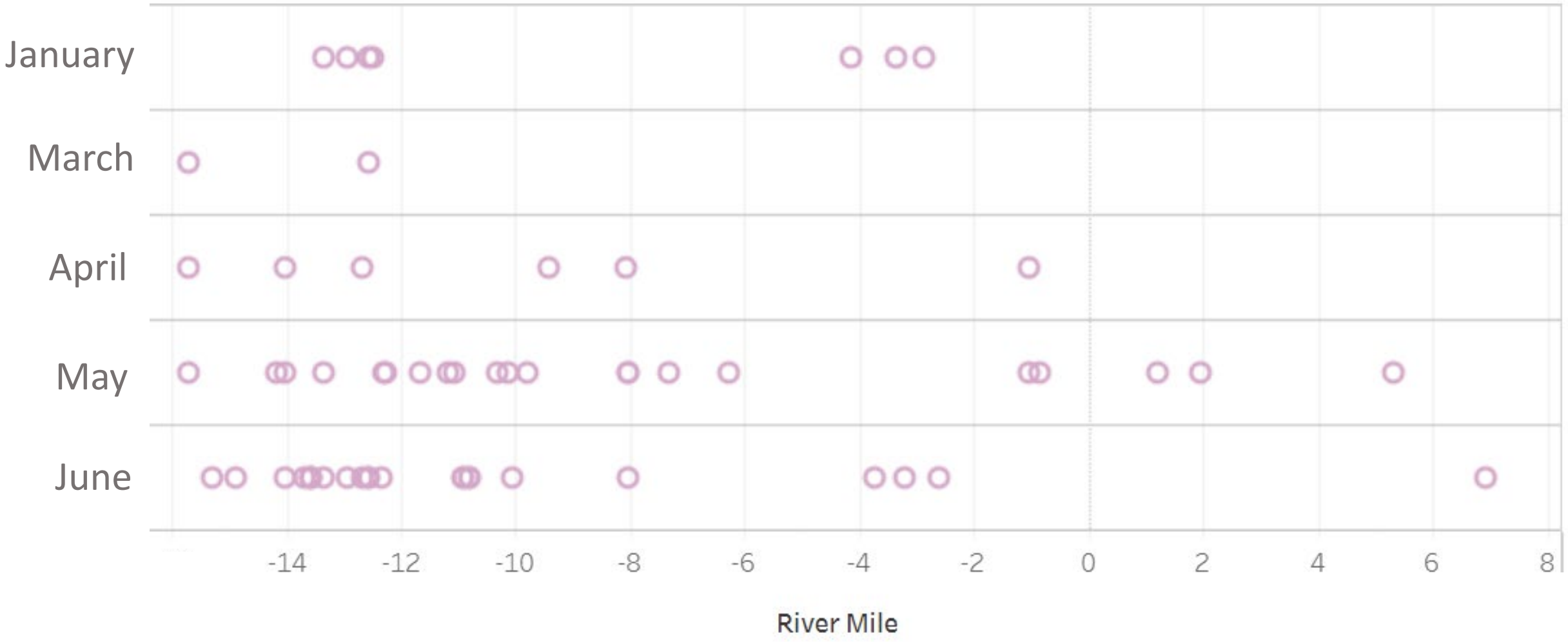

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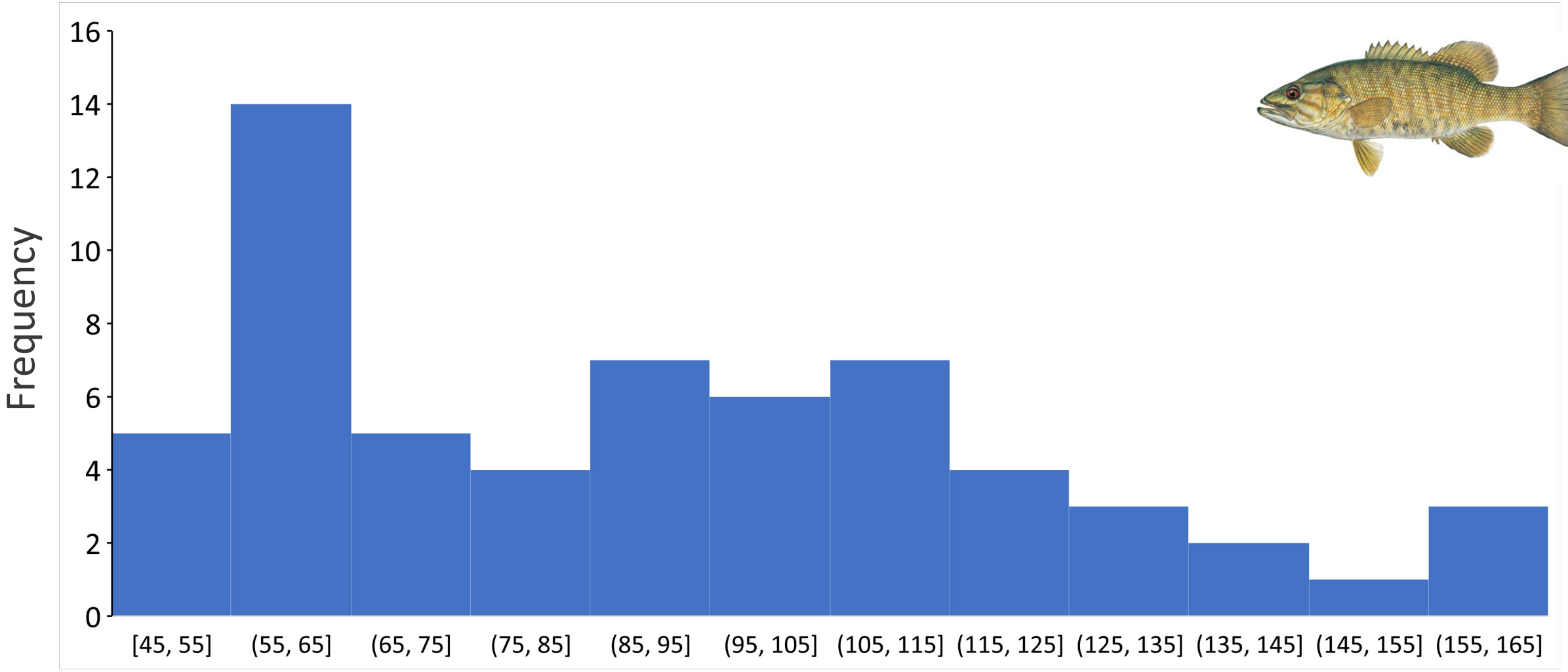
Figure: T. Gushue, USGS

2024 Smallmouth Bass Captures (so far)



(Slow growth with colder temps)

Figure: M. Trammell, NPS

2024 Smallmouth Bass Captures (so far)

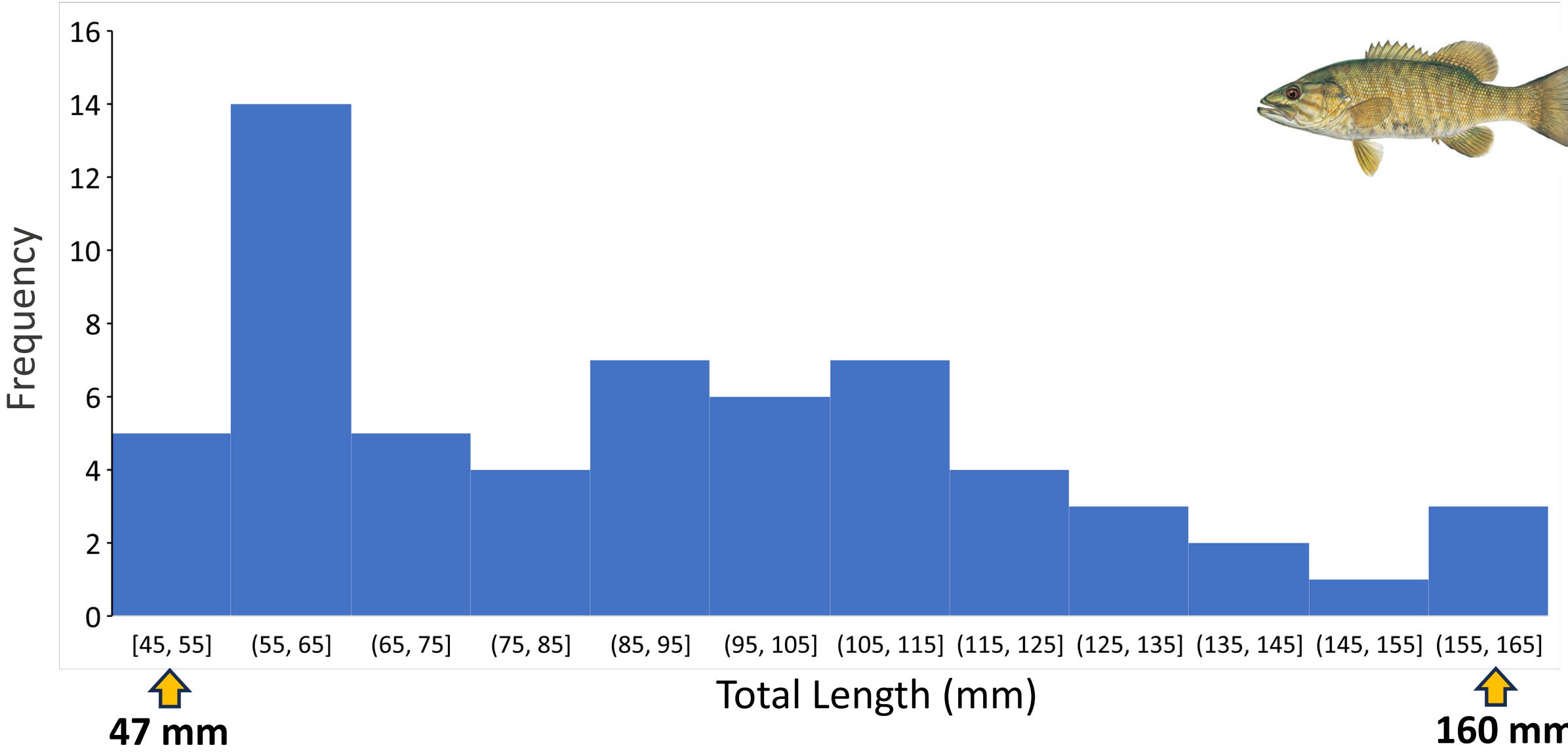
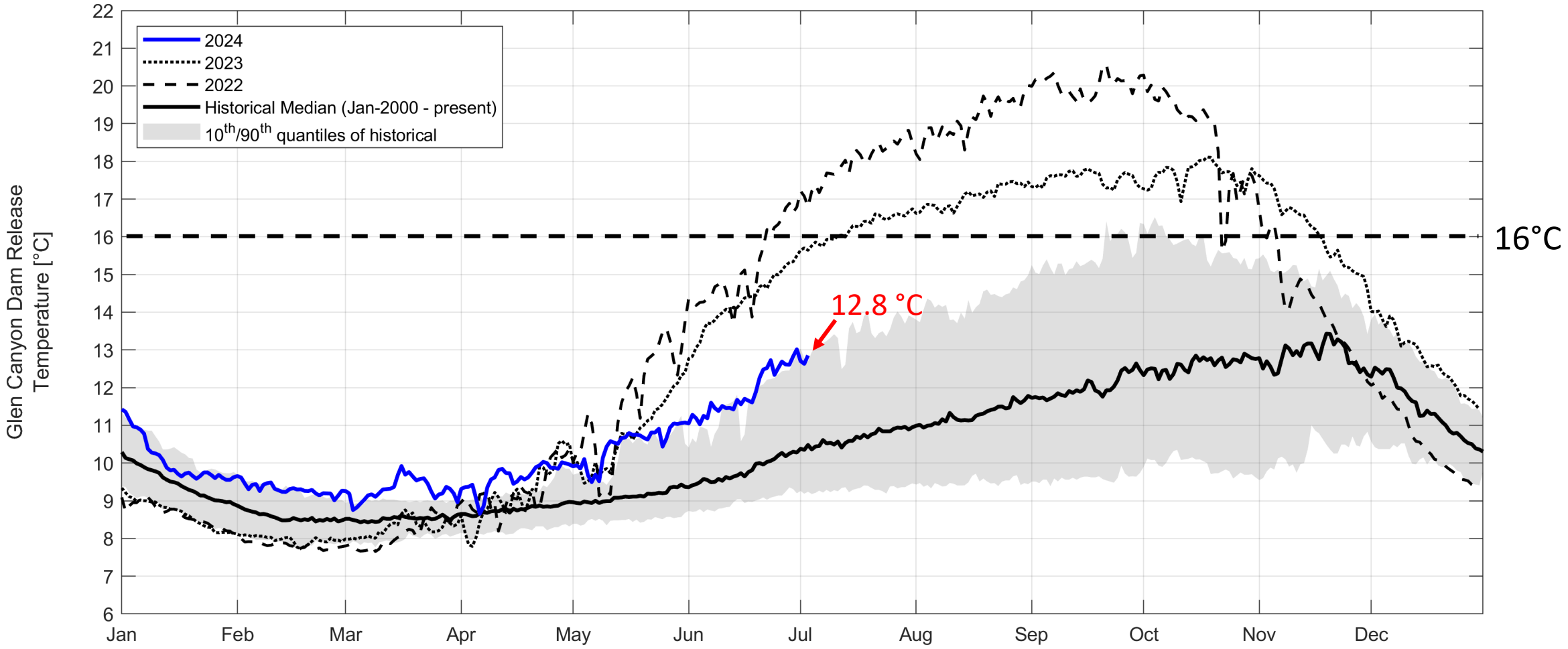


Figure: M. Trammell, NPS

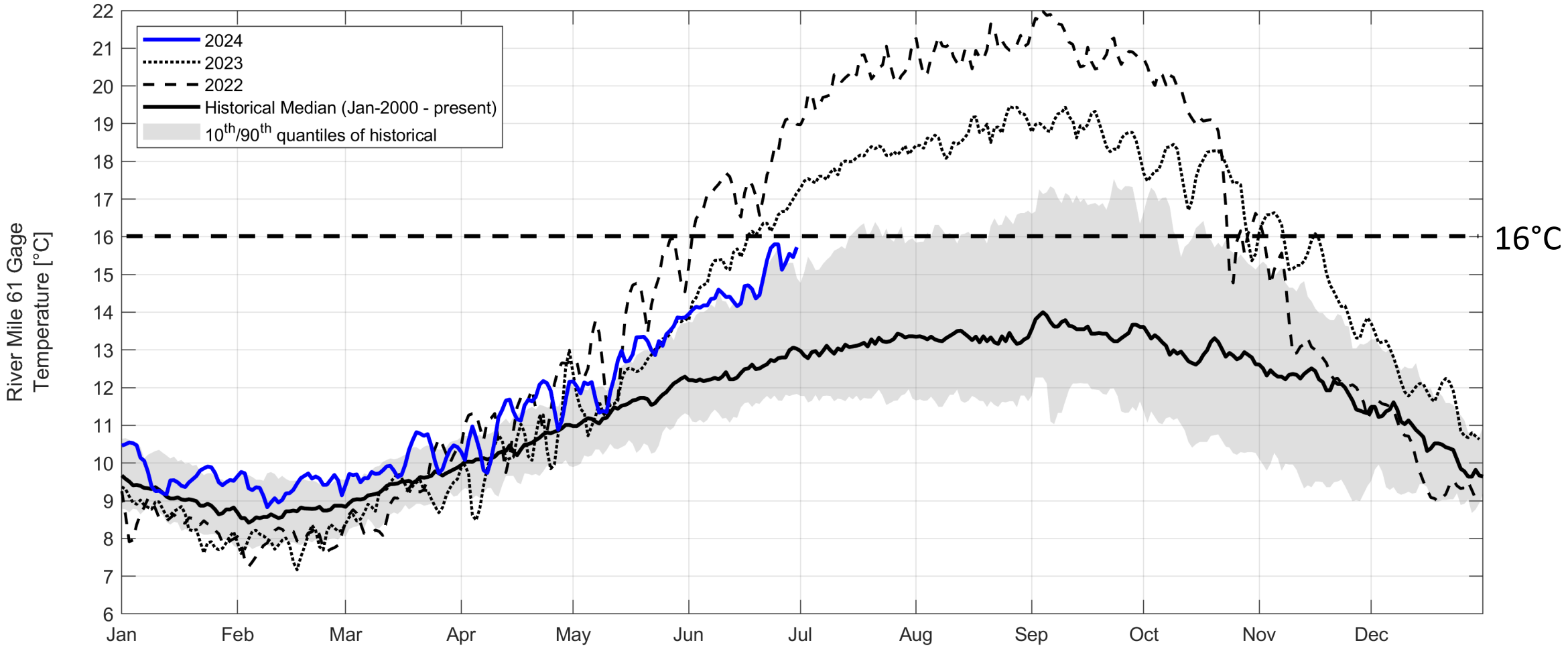
Glen Canyon Dam Release Temperature



As of 7/3/2024

Figure: B. Mihalevich, BOR

RM 61 Temperature



As of 6/29/2024

Figure: B. Mihalevich, BOR

Lower Slough Water Temps: May 24 to June 21, 2024

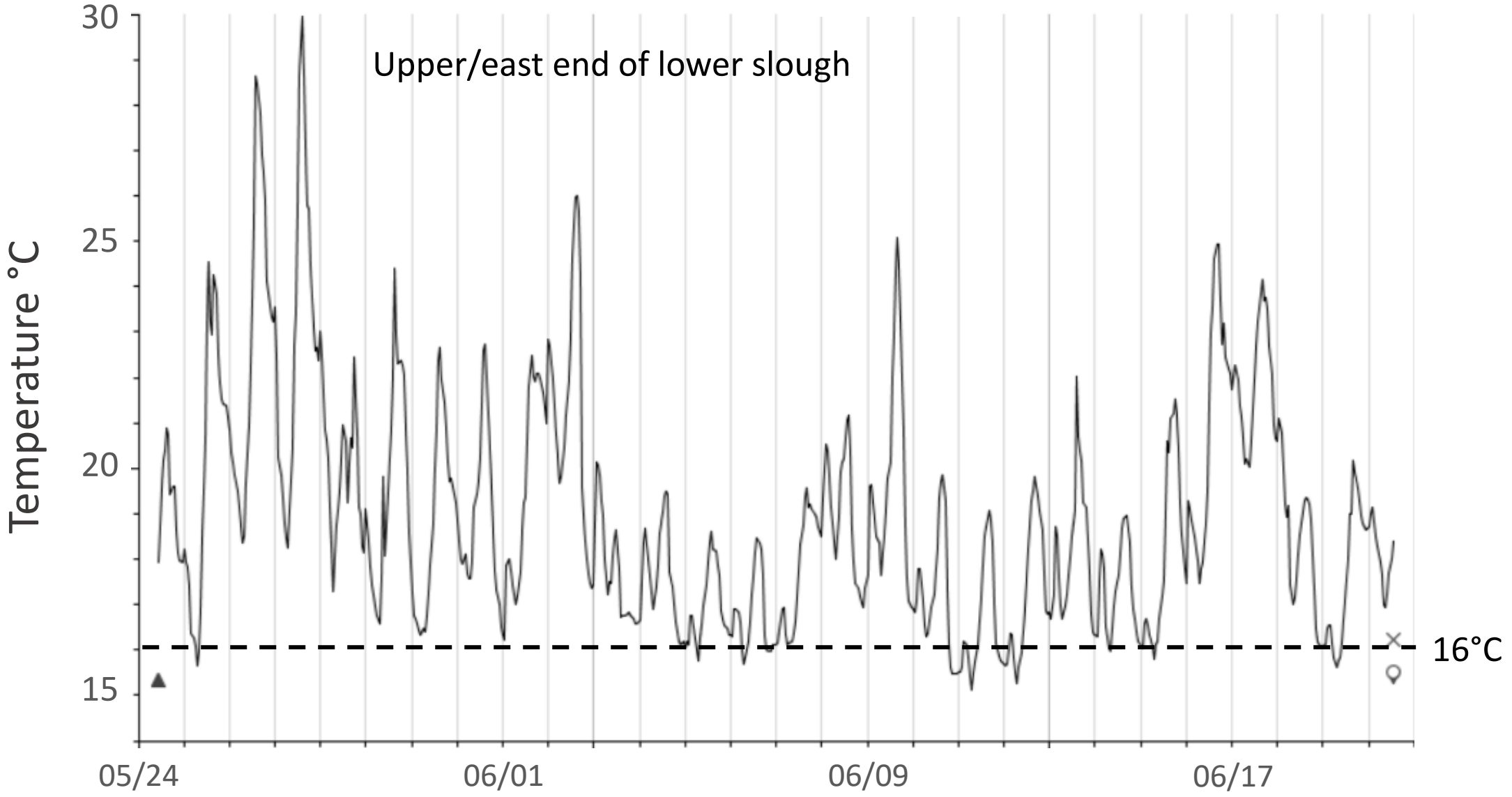
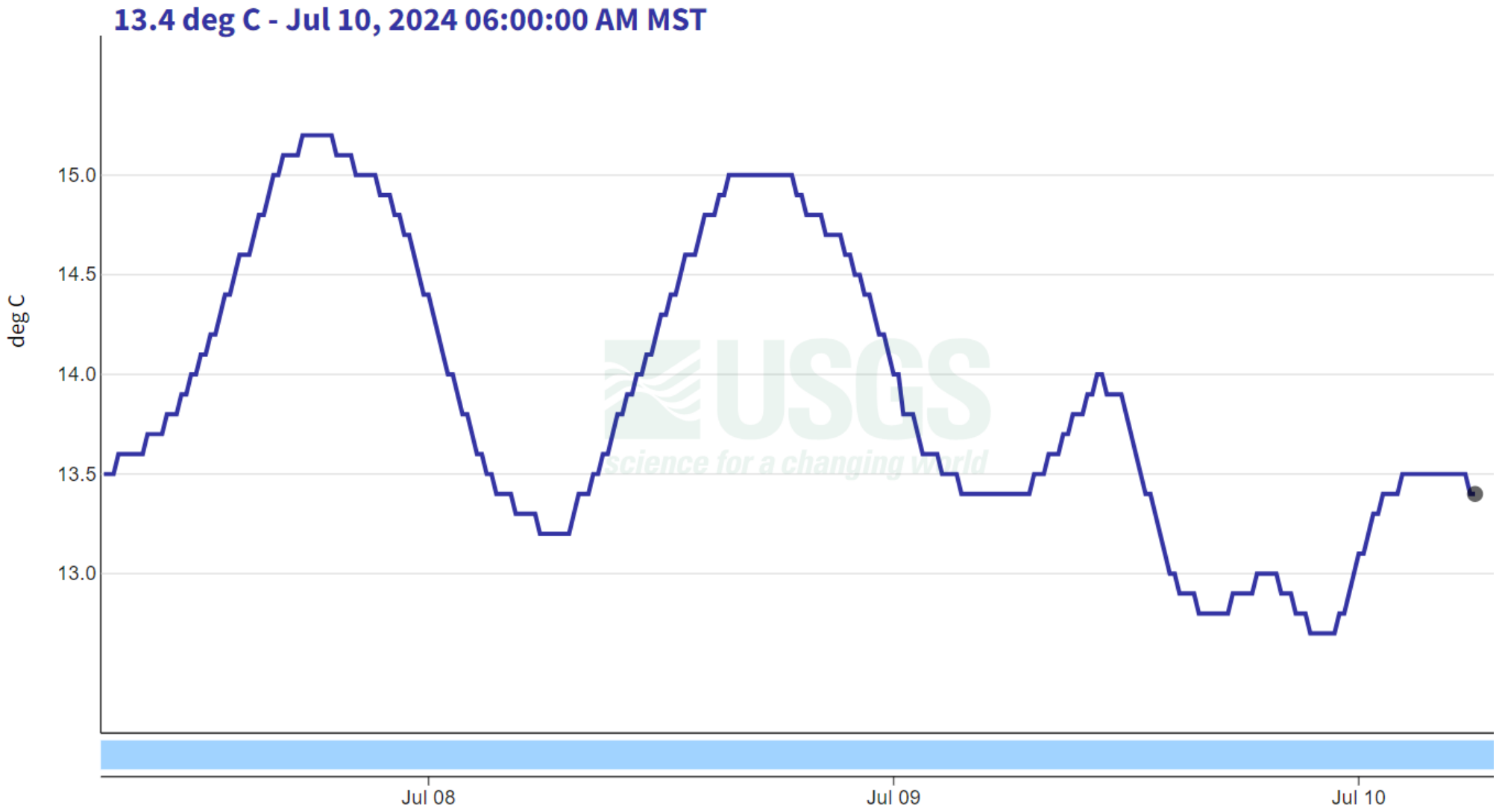


Figure: J. Arnold, NPS

Lees Ferry Temperature



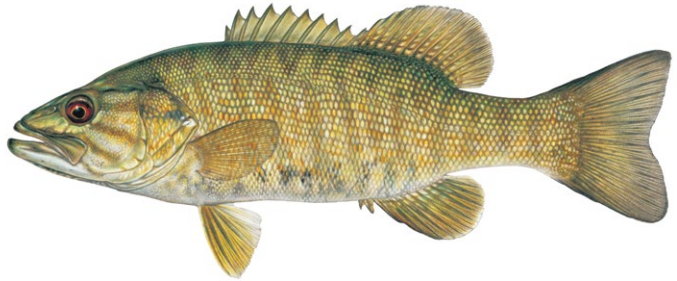
As of 7/10/2024, 6:00AM

Preliminary Information-Subject to Revision. Not for Citation or Distribution

Data: USGS Gage 09380000

2024 Monitoring Plan Outline

High-Risk Nonnative Species Monitoring and Research



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SMB Research and Monitoring

Determining the effectiveness of removals & potential flow experiments

Abundance/ Catch

Distribution/ Dispersal

Growth

Diet

Kinship

Reproduction?

No evidence of Age-0

Evidence of Age-0

Age-0 Growth Rate

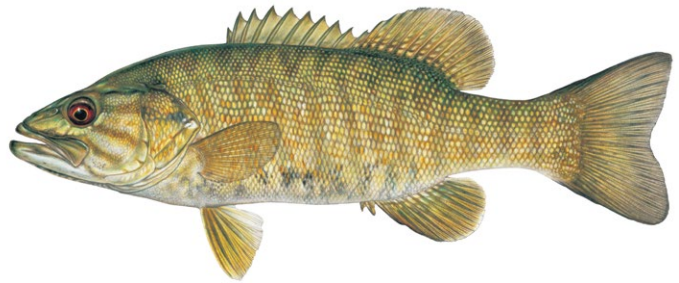
Recruitment?

Entrained from Lake?

Reproduced locally?

When? (relative to experimental actions)

Where? (mainstem or backwater)



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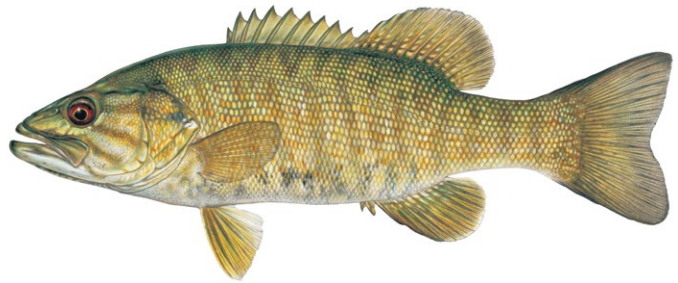
SMB Modeling



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SMB Research and Monitoring

Determining the effectiveness of removals & potential flow experiments

- Update SMB forecasting tools, if new information available, e.g. lab trials (I.4)
- Close-kin mark-recapture model (I.4)
- Occupancy model (G.1, I.4, N.1)
- Determine effectiveness of management actions (I.4, I.5)

SMB Modeling

Abundance/ Catch

CPUE using fish trip data
Close-kin mark-recapture analysis (I.2)

Distribution/ Dispersal

Occupancy/catch by river mile using fish trip data (I.4)

Growth

Modal progression analysis of fish trip data

Diet

SMB diet data (F.4)

Kinship

Kinship analysis (I.2)

Reproduction?

Side scan sonar for nests – pilot
Artificial spawning beds– pilot
Capture of juveniles on fish trips
NPS hotspot sampling, snorkel survey

No evidence of Age-0

Evidence of Age-0

Modal progression analysis of fish trip data
Otolith analysis (I.6)

Age-0 Growth Rate

Recruitment?

Entrained from Lake?

Ongoing entrainment studies (USBR)
Kinship analysis (I.2)
eDNA entrainment study (I.3)

Reproduced locally?

When? (relative to experimental actions)

Hatch data/otolith analysis (I.6)

Where? (mainstem or backwater)

Hatch data/otolith analysis (I.6
Sampling slough
NPS Removals
Trout sampling (H.1/H.2)

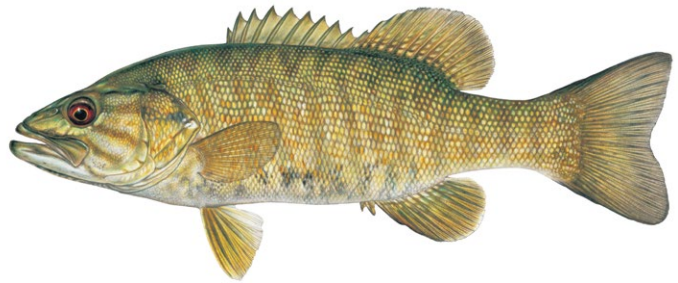

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Photo Credit: Richard McLeish

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deppehimer@usgs.gov

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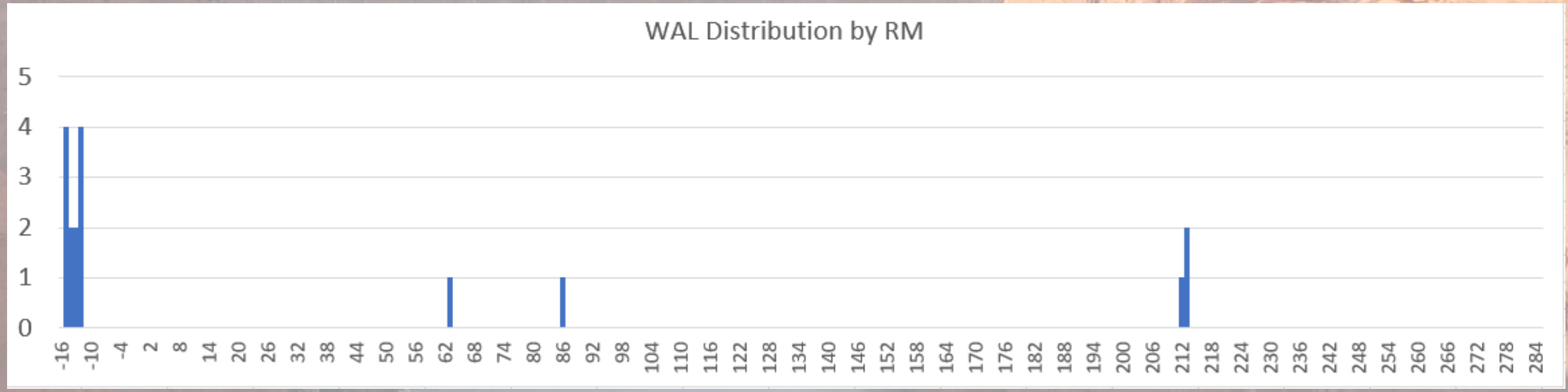
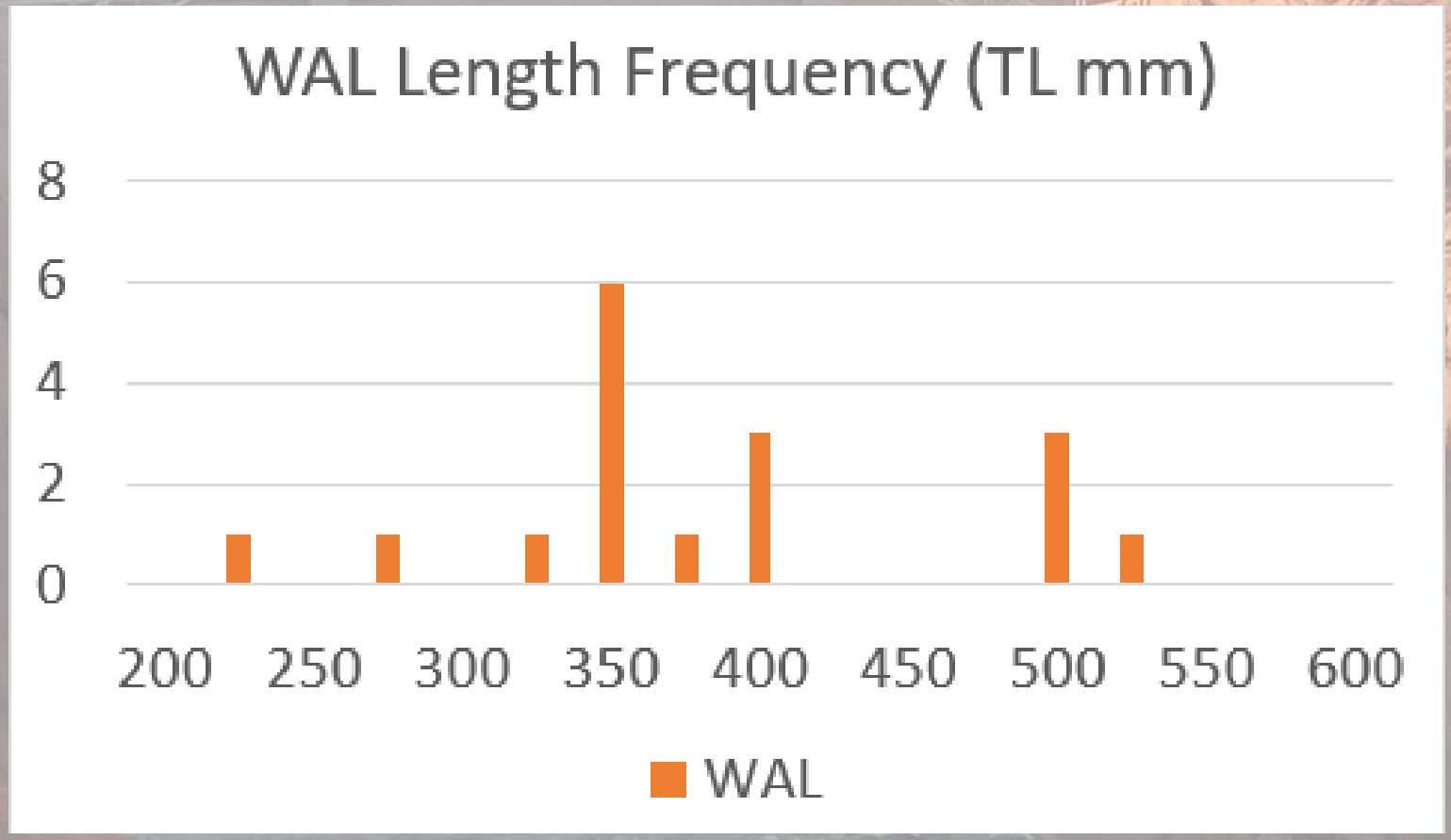
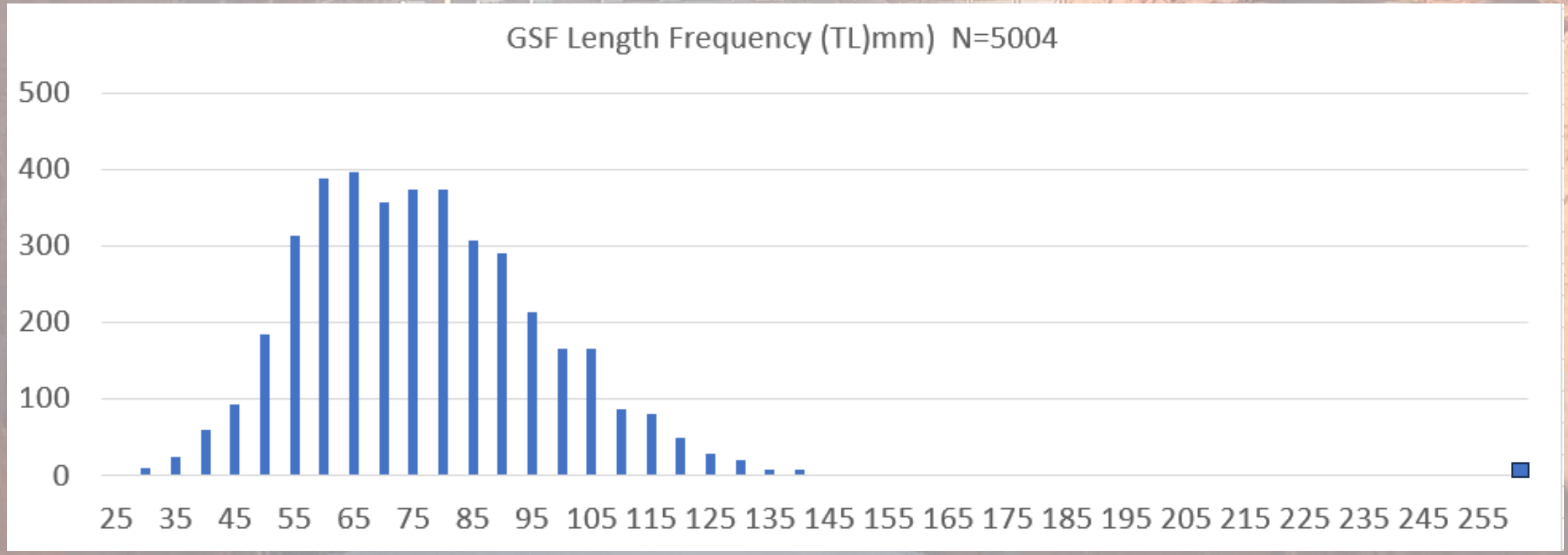
Walleye captures Jan-June, 2024
N=17



WAL captures Jan-June 2024



GSF captures Jan-June, 2024 N=5004



GSF captures Jan-June, 2024
N=5004