# A method for quantifying the number of US lakes with cyanobacterial harmful algal blooms using satellite remote sensing 

Megan M. Amanatides Coffer ${ }^{1,2}$, Blake A. Schaeffer ${ }^{3}$, John A. Darling ${ }^{3}$, Erin A. Urquhart ${ }^{1}$, Wilson B. Salls ${ }^{1}$ ${ }^{1}$ ORISE fellow, Office of Research and Development, U.S. EPA, Durham, NC
${ }^{2}$ North Carolina State University, Raleigh, NC
${ }^{3}$ Office of Research and Development, U.S. EPA, Durham, NC


ミEPA
Environmental Protection


## 今EPA

United States
Environmental Protection
Agency


Onboard Envisat 2008-2011
Data collected every 3 days



Onboard Sentinel-3A and 3B 2017 and beyond Data collected every 1-2 days


United States Environmental Protection



# 

Environmental Protection
Agency
ancter

```
United States
```

```
United States
```


Envirommental Protection
Agency
$\square$
$\qquad$

[^0]$\square$
$\square$




Classified as
BLOOM

## BEPA

```
Agency
```

a

## 今EPA



## 今EPA



For each weekly composite...


For each weekly composite...


For each weekly composite...


## CONUS Bloom Percentage



## 今EPA




## 今EPA

Northwest Rockies and Plains


BEPA
United States
Environtental Protection
Agency
Agency

Lake Harris, FL, USA



May


September


February


June


October


March


July


November


April


August


December

For the first time, we are able to quantify the number of large US lakes with cyanobacteria.

For the first time, we are able to quantify the number of large US lakes with cyanobacteria.

CONUS bloom percentage followed a seasonal pattern well-supported in the literature peaking in late-summer to early-autumn. Most climate regions followed a pattern with the exception of the Southeast and South which peaked in the wintertime.

For the first time, we are able to quantify the number of large US lakes with cyanobacteria.

CONUS bloom percentage followed a seasonal pattern well-supported in the literature peaking in late-summer to early-autumn. Most climate regions followed a pattern with the exception of the Southeast and South which peaked in the wintertime.

A small case study at Lake Harris in FL, USA illustrated this phenomenon on a monthly scale. Environmental conditions and satellite artifacts could explain this pattern.

amanatides.megan@epa.gov


[^0]:    

