Request for Approval under the "Generic Clearance for Citizen Science and Crowdsourcing Projects"
(OMB Control Number: 2080-0083; EPA ICR Number: 2521.45)

TITLE OF INFORMATION COLLECTION: bloomWatch and cyanoScope cyanobacteria monitoring project

PURPOSE: The goals of this program are to provide insights to the occurrence, proliferation, and makeup of potentially harmful cyanobacteria blooms across the country and in our National Parks while directly benefitting participants and stakeholders with early notifications and identifications of potentially toxic cyanobacteria. The Department of Interior is partnering with EPA's Cyanobacteria Monitoring Collaborative in Region 1 to engage EPA, park staff, and citizen scientists/stakeholders in using EPA developed phone APP software and water monitoring tools for collection and identification of cyanobacteria. The information provides early warnings and documentation of developing harmful cyanobacteria blooms and helps determine potentially toxic cyanobacteria. It is critically important to engage in crowdsourcing and citizen science for tracking harmful algal blooms because they can be visually fleeting, changing with wind directions, daily migrations through the water column, and dispersion through wave action. For these reasons and others, it is logistically impossible for staff to be at the right places at the right times. Citizen scientists can fill this critical gap and provide important insights to bloom timing, persistence, and potential for toxicity to humans and wildlife. The tools also provide an opportunity to document blooms that may be occurring in remote areas often found in our national parks and accessed more frequently by visitors than park staff due to their priority duties needed elsewhere. The information collected will be utilized to alert state and local governments of a potentially harmful cyanobacteria bloom, along with its general size, prevailing weather conditions, and location.

NEED AND AUTHORITY FOR COLLECTION: Under the Harmful Algal Bloom And Hypoxia Research and Control Act at 53 CR §4002, USEPA is tasked with several program duties pertinent to support for HAB monitoring tools including coordinating with and working cooperatively to provide technical assistance to regional, State, tribal and local government agencies and programs that address freshwater harmful algal blooms; integrating, coordinating and augmenting existing education and extension programs to improve public understanding and awareness of freshwater harmful algal blooms; facilitating and providing resources to state and local water managers in technologies for monitoring freshwater harmful algal blooms; developing and enhancing infrastructure for monitoring, data management and information dissemination relevant to freshwater harmful algal blooms; and increasing the availability to public and private entities of harmful algal bloom information. This effort will also be implemented under the authority of the Crowdsourcing and Citizen Science Act of 2017. Crowdsourcing and citizen science are critical aspects of this program and fill an important gap in tracking harmful algal blooms.

There is a significant need for understanding the type, occurrence, and extent of harmful cyanobacteria blooms in our Nation's waterbodies and national parks while simultaneously increasing the public awareness of cyanobacteria and their potential harm to human health and the environment.

The National Environmental Education Act, § 4, 20 U.S.C. § 5503 authorizes EPA to develop and support programs to increase environmental literacy. This program greatly enhances the public knowledge on cyanobacteria blooms through active participation and provides vital information on bloom occurrence and behavior in areas that the public frequents, but EPA does not have the resources to survey. OMB Memo M-15-16 encourages agencies to use approaches such as citizen science, which is a key component

of this effort and formulates a strong collaborative effort between the public, EPA, and the Department of Interior.

USES OF RESULTING DATA: The resulting data will fulfill several needs at varying spatial scales. Data will be used to determine the seasonal timing and occurrences of cyanobacteria blooms in our national parks and across the country, what types of cyanobacteria are present in the blooms, the prevailing weather conditions at the time, and as an early alert system to local and state authorities and park management of the potential health risks to humans and wildlife. The data collection process and ensuing results has a large educational component that will assist the public and stakeholders on being informed of the types of cyanobacteria, how blooms occur, and the potential risks and management of waterbodies that are affected by these blooms. The resulting data is highly scalable and publicly available so that users can use it to fit their needs. The National Park Service will utilize it to determine what waterbodies in their parks are bloom forming waterbodies, which present cyanotoxins, which are frequent bloom formers, the status of their more remote waterbodies, for management of park drinking water supplies, and other purposes. EPA will utilize the data for determining local, regional, and national trends in bloom occurrence and bloom composition. This data will be used to tie in actual toxicity data resulting from these blooms, making a full circle connection between the visual documentation of a bloom, its composition, and its toxicity. Data will be used by stakeholders to become more informed on cyanobacterial blooms, assist in educating their constituents about identification of blooms and the associated health risks.

DATA COLLECTION METHODS: Data collection methods will utilize an EPA approved phone APP (bloomWatch) that collects images of blooms and data on size and extent, surface conditions, weather, and location details. Data collection will also consist of bloom sample collection via an approved EPA Quality Assurance Project Plan (QAPP) and uploading of microscopic images of bloom material to a public facing website (iNaturalist.org).

PARTICIPANT UNIVERSE:

Category of Respondent	No. of Respondents	Number of responses per respondent	Participation Time per response	Burden Hours
Uploading basic image only	1,500	4	10 minutes	1000
Uploading microscopic image+basic image	500	4	30 minutes	1000
Totals	2,000	4	10-30 minutes	2000

AGENCY COST: The estimated annual cost to the Federal government is $87,494.

The total dollar value of the agency cost is based on experience gained implementing the project under the first ICR and includes FTE to manage the application and the data submitted. We estimated the annual agency cost as the average hourly wage for all occupations (GS12 Step 5 - $53.35/hr) multiplied by 1.6 to account for benefits ($53.35 * 1.6 = $85.36) and then multiplied by half of an FTE ($80.96 * 1,025hrs = $87,494).

STATISTICAL ANALYSIS:

Collected information will be utilized to determine regional trends in bloom occurrence, bloom duration, seasonality of blooms, type of cyanobacteria occurring within those blooms and the potential for toxicity. This information will be utilized with other agency collected information such as cell counts, public health advisories on blooms, actual cyanobacteria toxicity in recorded blooms, and the presence of harmful algal blooms in our national park system. Summary statistics will be tallied as the project progresses to make inferences to regional and national trends in bloom occurrences.

DATA QUALITY ASSESSMENT PROCEDURES: Data quality assessment is built into the mobile application to ensure consistency through drop down features such as dates, recurring place names, and bloom descriptions. Desired image types are explained in the APP for consistency purposes. Uploaded microscopic images are identified and taxonomic resolution is done through expert consensus. All protocols and methods are detailed in an EPA approved Quality Assurance Project Plan.

ADMINISTRATION OF THE INSTRUMENT: (Check all that apply)

[X] Web-based or Social Media   [ ] Mail

[ ] Telephone   [ ] Other, Explain

[ ] In-person

INSTRUMENT: Append a copy of the questionnaire or a screen shot of the website or app that includes the information collection.

CONTACT NAME: _____Susan Holdsworth_____   EMAIL: _____holdsworth.susan@epa.gov_____

Guidance: Request for Approval under the "Generic Clearance for Citizen Science and Crowdsourcing Projects" (OMB Control Number: 2080-0083)

TITLE OF INFORMATION COLLECTION: Provide the name of the collection that is the subject of the request.

PURPOSE: Provide a brief description of the purpose of this collection and how it will be used. If this is part of a larger study or effort, please include this in your explanation.

NEED AND AUTHORITY FOR COLLECTION: In this section, describe why the information is needed and under what legal authority it will be collected. Then, to **establish legal authority**, cite the principal authorities and explain how they relate to the collection.

USES OF RESULTING DATA: In this section, describe how the information you collect will fulfill a need. If your ICR is a renewal, you must include a discussion of how the Agency has made use of the information already received.

DATA COLLECTION METHODS: To demonstrate that the information you collect will be useful - accurate, reliable, and retrievable - once collected, describe the collection methodology and management.

PARTICIPANT UNIVERSE: To calculate the total burden and costs, you must estimate the number of respondents to complete each activity. The total number of respondents is also referred to as the respondent universe. In estimating the respondent universe, you should consult industry reports, census data, or a previously completed Information Collection Request. The public comment period or your consultations (with nine or fewer respondents) may also provide some information on the approximate number of respondents.

You should note that the respondent universe may vary among the activities listed because not all respondents must complete each activity.

AGENCY COST: To estimate agency costs, multiply burden hours per activity by labor rates. The cost to employ Federal government workers is published annually by the Office of Personnel Management. Estimate the cost to the Federal government for just the information collection, not the project as a whole. In your write-up for this section, briefly explain how you derived your Agency burden and cost estimates.

STATISTICAL ANALYSIS: Briefly explain your statistical analysis. In your discussion, confirm that the anticipated survey results will satisfy the survey objectives and your program's information needs.

Also, if you plan to use a contractor for any aspect of the survey, state the name and address of the firm, and indicate on which component(s) (i.e., design, tabulation, etc.) the contractor will provide support.

ADMINISTRATION OF THE INSTRUMENT: Check all that apply.

INSTRUMENT: Append a copy of the information collection or a screen shot of the website or app that includes the information collection.