

1 SUPPORTING STATEMENT A FOR

Using web and mobile-based applications during NPS Citizen Science events

OMB Control Number 1024-0275

Terms of Clearance: None.

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.

This collection is authorized by *National Park Service Protection Interpretation and research in System (54 USC §100702)* which states that the Secretary shall ensure that management of System units is enhanced by the availability and utilization of a broad program of the highest quality science and information. The National Park Service (NPS) is also mandated by the Organic Act of 1916 to “conserve... wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” In order to fulfill this mandate, the NPS uses citizen science to bring together two fundamental values - using sound science to guide our management and decision making and connecting our work to the public that we serve.

Citizen science (also known as community science, crowd-sourced science, etc.) is generally defined as scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions. Participants usually include volunteers that have varying levels of expertise. They may be children exposed to science through school projects, high school students participating in science clubs, amateur scientists with little formal training, community groups organized around a science interest, educators, or naturalists.

In 2016, the NPS hosted more than 120 Centennial Bioblitz citizen science events to celebrate 100 years of stewardship. During each Bioblitz event, we used a web-based mobile application (iNaturalist) to collect information gathered through public participation. These events were extremely successful. Based upon that, we are now seeking to expand the scope of the currently approved collection to include additional applications to be used during NPS sponsored citizen science events.

A goal of the NPS is to promote public stewardship through education and engagement. In an effort to fulfill this goal we are using citizen science events to systematically collect and document more natural history and biological data in a single setting than we could alone. While we recognize that citizen science is not a replacement for expertise, we acknowledge that citizen scientists can provide information that would not otherwise be available due to time, geographic, or resource constraints.

By combining mobile and web-based technology with NPS citizen science events it is possible to provide more information about species of management concern (e.g. threatened species or invasive species), as well as species of scientific significance (e.g., new species due to range extension). We will also be able to provide a much wider segment of the general population an opportunity to contribute natural history observations that may have otherwise been missed by park researchers. With this information, the NPS will not only be able to maintain the components of naturally evolving park ecosystems, but we will also be able to provide evidence of the natural abundance, diversity, and genetic integrity of the

species within those ecosystems.

Legal Justification:

National Park Service Protection Interpretation and research in System (54 USC §100702)

The Secretary shall ensure that management of System units is enhanced by the availability and utilization of a broad program of the highest quality science and information

The National Park Service Organic Act of 1916, (38 Stat 535, 16 USC 1a-7, et seq.)

requires that the National Park Service “conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”.

Crowdsourcing and Citizen Science 15 USC 3724

Grants Federal science agencies the direct, explicit authority to use crowdsourcing and citizen science that will encourage its appropriate use to advance Federal science agency missions and stimulate and facilitate broader public participation in the innovation process, yielding numerous benefits to the Federal Government and citizens who participate in such projects

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection. Be specific. If this collection is a form or a questionnaire, every question needs to be justified.

We are requesting approval to use *mobile and web-based applications* (e.g., *iNaturalist*, *eBird*, etc.) as a means to record on-site species observations during NPS sponsored citizen science events. *iNaturalist* and *eBird* are third-party websites that allow the public to provide observations that include locations, photographs, and sound. Both of these platforms are currently being used by visitors in parks. OMB approval will allow parks to sponsor events and use the tools to collect data during the events. Park researchers and managers are currently using the data to:

- develop citizen science programs and research projects around these applications to facilitate data collection efforts from people currently using the platform,
- substantiate the presence and abundance flora and fauna in NPS units. This includes species that are threatened and endangered.
- create species checklists and documented the occurrence of new species observed in parks.
- develop park-related programs to give park manager a better understanding of what efforts are needed to improve park habitat and increase protection for the natural resources within,
- alert park managers about the status of species that may be of local management concern or are categorized as invasive or noxious and require coordinated treatment efforts.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden and specifically how this collection meets GPEA requirements.

The *mobile and web-based applications* in this collection are 100% electronic. All of the information will be collected using mobile devices (smartphones or tablets) and web browsers (e.g., Internet Explorer, Firefox, or Chrome). Individuals will use their personal devices to upload information, so there are no additional agency information technology investments or management needs associated with this collection.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

For the most part, most parks submit natural history observations using one of the two following methods:

- observation cards that visitors fill in by hand and there is no capacity to include photos and sounds, or
- anecdotal information that cannot be verified because there are no formal mechanisms to contribute natural history observations

We acknowledge that the following natural history recording systems are available.

- **Symbiota:** software used to develop specimen-based virtual flora/fauna web portals that allow users to generate maps, species lists, and identification keys for any well-collected area.
- **VertNet:** a web-based system that only reflects a subset of all taxonomic groups. Relying on VertNet would require combining multiple systems to provide the same information found in iNaturalist and eBird.
- **BISON:** maintains records of terrestrial and aquatic species but not natural history observations. We have chosen not to use this system because requires extensive validation to confirm each siting.

5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.

This data collection will not impact small businesses or other small entities.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

The overall consequence would be that the NPS would miss multiple opportunities to capitalize on the effort of citizen science events. The NPS would continue to lag behind the efforts of other non-governmental research organizations that use free mobile apps and citizen science programs to leverage a sizable volume natural history observations that would cost the agency hundreds of person-hours per project.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- * requiring respondents to report information to the agency more often than quarterly;
- * requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;
- * requiring respondents to submit more than an original and two copies of any document;
- * requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than three years;
- * in connection with a statistical survey that is not designed to produce valid and reliable results that can be generalized to the universe of study;
- * requiring the use of a statistical data classification that has not been reviewed and approved by OMB;
- * that includes a pledge of confidentiality that is not supported by an authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use;
- * requiring respondents to submit proprietary trade secrets, or other confidential information, unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.

There are no special circumstances.

8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and in response to the PRA statement associated with the collection over the past three years, and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every three years — even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

On November 23, 2018, we published in the Federal Register (83 FR 59413) a Notice of our intent to request that OMB renew approval for this information collection. In that Notice, we solicited comments for 60 days, ending on December 26, 2018. We did not receive any public comments in response to this Notice.

In addition to the Federal Register Notice, we reached out via telephone to NPS partners that organize and implement BioBlitz events. We asked them to summarize their experience with the data collection efforts before and after the implementation of iNaturalist. We also asked non-NPS users of iNaturalist about their use of the application and the amount of time it typically takes them to record an observation. The comments received are summarized below:

- Comment #1: For the past ten years, I have used paper data sheets in the field. The adoption of iNaturalist has greatly reduced the time spent accurately record the information so that it can be useable.
- Comment #2: As a regular user of iNaturalist this commenter appreciated the that the mobile application allows the user to fill out more fields and is vastly simpler process than the alternative of using paper data sheets.
- Comment #3: When asked about the time it took to record finding this commenter said that it typically takes them no more than a few minutes to record a single observation, however the time spent is often based upon the number of photos taken or the level of detailed description they choose to provide.
- Comment #4: When asked if it takes more than five minutes to record a single observation, all of the commenters said that it has always taken then less than five minutes to record a single observation.
- Comment #5: the non-NPS users (i.e., volunteers) said that they felt more comfortable using the iNaturalist over the paper versions. They were more certain that their electronic submissions are used by the NPS because they felt the paper versions were filed or perhaps lost and never used.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

We do not provide payments or gifts to respondents.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

We do not provide any assurances of confidentiality. However, a Privacy Impact Assessment (PIA) for the original submission (the December 28, 2015) concluded that the agency has significant safeguards in place for the protection of any personally identifiable information (PII). In the event that any PII is collected the agency will adhere to the federal privacy laws, regulations, policies and guidelines. A copy of the completed PIA has been entered into the Cyber Security Assessment and Management (CSAM) and attached in ROCIS as a supplementary document.

Privacy risks associated with the third-party system is mitigated per the Privacy Policy detailed on the individual sites. Privacy risks associated with the natural history observations that are loaded into the NPSpecies data system from iNaturalist and eBird systems are minimal. This is because the only PII that is included in the NPSpecies data system is the username and/or actual name (if provided) of the individual who observed an organism in an NPS unit. This information alone does not provide contact information for an individual.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

No questions of a sensitive nature will be asked.

12. Provide estimates of the hour burden of the collection of information. The statement should:
- * Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.
 - * If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.
 - * Provide estimates of the annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here.

We estimate 112,500 annual responses totaling 9,375 annual burden hours. The annual dollar value for the burden hours is estimated to be \$339,562 (rounded). The estimated burden for each app is listed in the table below. The amount of time spent on each observation vary based upon the event and experience of the observer. We anticipate that the five minutes will be spent recording observations, including recording relevant details about the species, location and taking photos of the species and surroundings. In addition, we are assuming that over the course of an event, each respondent will average about 15 observations. Our estimates are based on experiences with *iNaturalist* tools and user feedback. Typical response time required an average of five minutes per observation time to enter information into app. The number of respondents is an extrapolation based on previous Bioblitz events.

Table 12.1. Estimated hour burden for the collection of information

Type of Respondent	Annual Number of Respondents	Average Number of Responses	Total number of Responses	Average Time per Response (min.)	Total Annual Burden (hrs.)
iNaturalist	5,000	15	75,000	5	6,250
eBird	2,500	15	37,500	5	3,125
TOTAL	0	15	0	5	0

We used the Bureau of Labor Statistics (BLS) News Release [USDL-18-1499](#), September 18, 2018, Employer Costs for Employee Compensation—June 2018, to calculate the total annual burden. We used Table 1 to calculate the hourly rate for all workers as \$36.22, including benefits.

Table 12.2. Total Annual Costs to Federal Government

Activity	Annual Number of Responses	Estimated Time per (min)	Total Annual Burden Hours	Dollar Value of Burden Hour Including Benefits	Total Dollar Value of Annual Burden Hours*
iNaturalist	75,000	5	6,250	\$36.22	\$226,375
eBird	37,500	5	3,125	\$36.22	113,187
TOTAL	0	5	0		0

Park employees will use an NPS google to register any citizen science events using iNaturalist or eBird. This will allow the program to monitor the burden hours for this collection. During the centennial BioBlitz events, our team sent out a memo to all parks telling them to register all events via the website to get credit for hosting an event. More than 120 parks used the website to register. (see attached screenshot of the google site)

13. Provide an estimate of the total annual non-hour cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected in item 12.)

- * The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life) and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information (including filing fees paid for form processing). Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.
- * If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.
- * Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.

There are no non-hour burden costs resulting from the collection of this information.

14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information.

Table 14.1 below shows the estimated cost to the Federal Government for this collection to be \$86,015. This accounts for the cost to the Federal Government for salaries and benefits for the associated with this collection. We used the Office of Personnel Management Salary Table 2018-DEN to determine the hourly rates and multiplied the hourly rate by 1.6 to account for benefits in accordance with BLS News Release USD-18-1499, September 18, 2018, Employer Costs for Employee Compensation—June 2018. There are no non-Federal employee costs associated with this collection.

Table 14.1. Federal Employee Salaries and Benefits

Position	GS Level	Hourly Rate	Hourly Rate incl. benefits (1.6 x hourly pay rate)	Estimated time (hours)	Annual Cost*
Program Manager	12/5	\$43.33	\$69.32	104	\$7,209
Data Manager	11/5	\$36.15	\$57.84	625	36,150
Data Entry Technician	5/5	\$19.72	\$31.55	1,352	42,656
Total					0

*Rounded

Source - https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2018/DEN_h.pdf

15. Explain the reasons for any program changes or adjustments in hour or cost burden.

The program change for this collection is based upon the notable success we had using iNaturalist during the Centennial BioBlitz events. We would now like to request an increase in the number of annual iNaturalist observations for this collection as well as add eBird. We did not feel it necessary to have a separate burden for non-federal scientists. This category has been removed and the burden for this group is now included in the estimated burden for iNaturalist and eBird.

The adjusted net increase is reflecting in the table below. We are requesting an annual increase of 51,250 additional observations and 4,271 respondent burden hours. This would result in an annual total of 112,500 observations and 9,375 respondent burden hours.

Table 15.1. Program Changes due to Agency request.

Respondent	Previously Approved		Current Request		Program Change due to Agency Estimate	
	Annual Number of Observations	Time Burden (hours)	Annual Number of observations	Time Burden (hours)	Annual Number of Observations	Time Burden (hours)
iNaturalist	40,000	3,333	75,000	6,250	35,000	2,917
eBird	0	0	37,500	3,125	37,500	3,125

Non-Federal Scientist	21,250	1,771	0	0	-21,250	-1,771
TOTAL	0	0	0	0	0	0

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The information from this request will not be used for statistical purposes; therefore none of the results will be tabulated. The information in this collection will be uploaded into a third party application and will only include natural history observations and photographs taken during citizen science events.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

We will display the OMB control number and expiration date on the NPS website that directs visitors to *other mobile and web-based applications used by the parks* (see mockup attached as a supplementary document in ROCIS).

18. Explain each exception to the certification statement.

There are no exceptions to the certification statement.