

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Very Good

Explanation to Applicant

This proposal examines how ongoing greening of urban environments is influencing the decline of house sparrows, a once dominant invasive species now showing evidence of declines. The link between historical data and the use of bird feeders to investigate this question is a nicely integrated approach. Overall, this proposal would have been stronger had it (1) not been focused on HOSP alone, which gives it the feeling of being a bit narrow, despite the clear potential to investigate overall changes in urban bird communities, (2) incorporated more community ecology theory as a framework for hypothesis development, and (3) considered more sophisticated analyses given the wealth of available data (i.e., how would you analyze the data in Fig. 1? Could go far beyond paired-t to use time-series analyses and nonlinear models).

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Very Good

Explanation to Applicant

Prior experience with Nestwatch and intended future work with Girls Place are excellent in helping to promote science education. Applicants diverse background will help her connect to wide range of students. Link to international research in France also a plus.

Summary Comments

Overall an interesting proposal aimed at evaluating how ongoing changes in urban environments (i.e., more tree growth) are affecting the house sparrow. Results have potential implications for understanding shifts in urban communities generally, and applicant shows a strong track record of BIs that will be continued in this proposal

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Good

Explanation to Applicant

As a first generation college student, the applicant had to overcome some academic hurdles. The references provide evidence of curiosity, motivation, work ethic, determination, drive, and leadership. The applicant has had diverse research experiences and presentations but as yet no publications.

The research plan is interesting. It aims to test the hypothesis that increasing tree cover in small cities is causing declines in native house sparrows and to determine some of the mechanisms by which the declines are occurring, e.g., predation or competition. The plan demonstrates scientific thinking in that it includes a calculation of statistical power. The research plan involves innovative use GIS and citizen science data (e.g., Christmas bird counts). It suggests an innovative method to ask questions about large scale patterns. The reference letters provide evidence that other hypotheses are also being considered for the declines, e.g., disease, but these hypotheses are not mentioned in the plan. The research also has implications for understanding other invasive species. However, for this question the argument will always be one of correlation, as causation is impossible to determine without experimental manipulations. The research plan includes data but this graph is not convincing because there is no label on the Y axis.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Good

Explanation to Applicant

Collecting data on urban birds and invasive species has the potential to have important broader impacts on the cities of the Nation. The applicant is also interested in international collaborations to explore similar house sparrow declines in Europe. In addition, the applicant has specific ideas for involving children in the research. The applicant also has the potential to add to the diversity of the scientific workforce as the first family member to attend college. The broader impacts section could be improved by considering other ways to have broader impacts such as mentoring undergraduates.

Summary Comments

The references provide evidence that the applicant has overcome academic difficulties to become a leader in the graduate program. The applicant has diverse research experience and an interesting research plan, but as yet no publications. The broader impacts will come both from the understanding of native and invasive bird species and the specific plans to conduct outreach with children. As a first generation college student, the applicant has the potential to be an important role model.

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Explanation to Applicant

The applicant has made a compelling argument as to the merit of the proposed research and maintains the skill set and apparently the drive to complete this ambitious effort. The proposed study seems to provide an interesting assessment of how land cover change in urban environments could be used to diminish the occurrence of non-native, invasive wildlife species in these systems. The proposed research approaches are well defined and delineated by the applicant. This seems to be a very ambitious effort with the amount of field work and coordination necessary and I commend the applicant for its undertaking.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Very Good

Explanation to Applicant

The applicant has indicated a very nice approach for potential outreach through the research in engaging young ladies in the actual studies during their summer camps. This is to be highly commended to the applicant. This panelist would like to see the applicant draw a more firm relationship between the impacts of urban greening efforts and sustainable management of urban systems why should these green systems be encouraged. It would be beneficial to expand the outreach components of the proposal to include the scientific outreach as a means to tie science to society, but the applicant seems to be prepared to conduct, analyze and disseminate the findings in a meaningful manner.

Summary Comments

Good proposal and likely fundable.