



Highlights in EE Research and Evaluation

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Difference between Research and Evaluation

Research

- “How does it work?” (general)
- Researcher focused and funded
- Result: Knowledge and published papers

Evaluation

- “How well does it work?” (specific)
- Stakeholder focused and funded
- Result: Information and improved effectiveness

Shared approach: Careful data collection and analysis to better understand some problem/process

Example of each + Resources for your journey



Evan

Home



ECOS

Facebook



ECOS

Facebook



Options



Search in Conversation

Manage Messages



Notifications

Facebook Page

<https://facebook.com/springfieldforestpark/>

Although I am new to Western Mass, it did not take long for me to hear about the ECOS program and its long history in Springfield. I am in the process of my masters thesis and wanted to initiate conversation about working with ECOS to see how participation in the program may affect the way students spend time outside in their non-school hours. It would be possible for me to chat with someone to learn more about the ECOS program? My email is ekuras@springfieldmass.edu and my phone number is 914.960.2919 if those modes of communication are easier than Facebook.

Best,
Evan Kuras
PS - congratulations on the groundbreaking!

10/12/2015 10:23



You've come to the right place, Evan. We've been waiting for you. I'll be in Amherst next week on either Tuesday or Wednesday if you'd like to meet.

researcher-initiated
and funded
but good synergy

Welcome to ECOS | Ms. Cesan
 Structure + Function Mr. Terkelsen

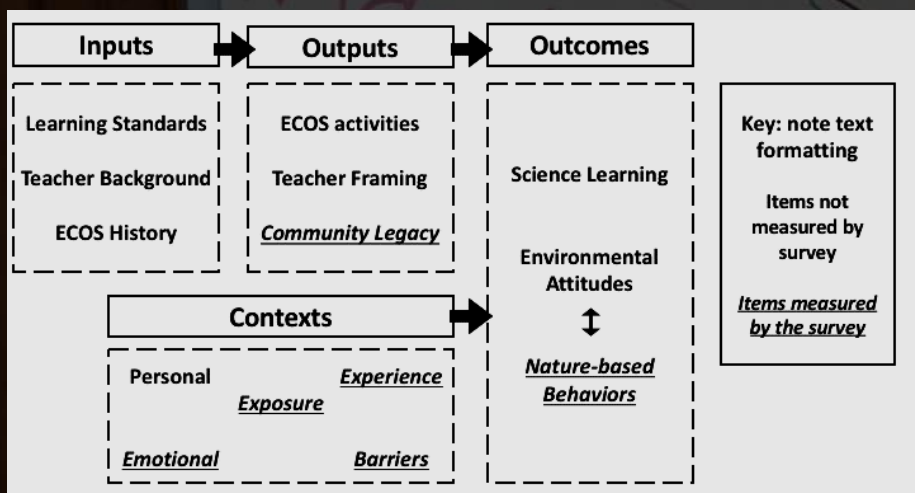
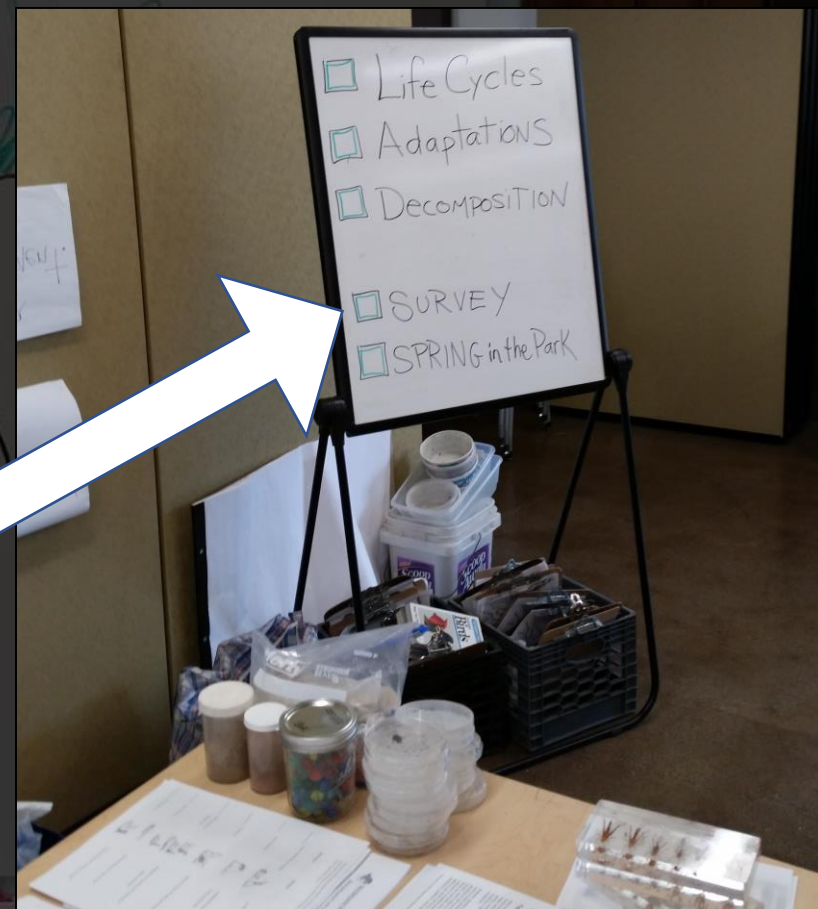


- My goal: how are children changed by experiences with biodiversity?
- ECOS' goal: how does our program change students?

ECOS: Identifying shared goals

What happened next:

- Worked with teachers to develop Logic Model (ask me about this later)
- Designed a survey
- Implemented survey and analyzed results



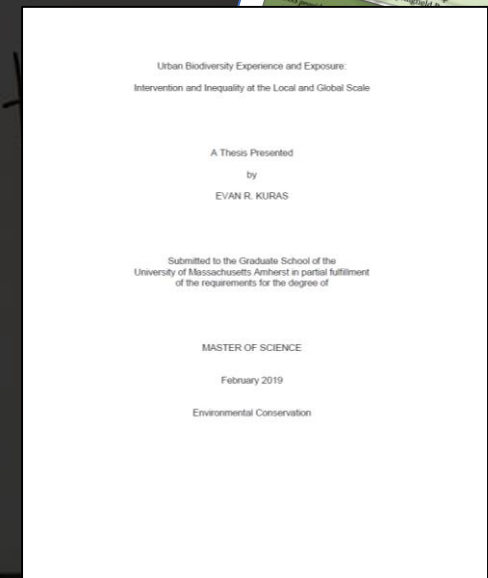
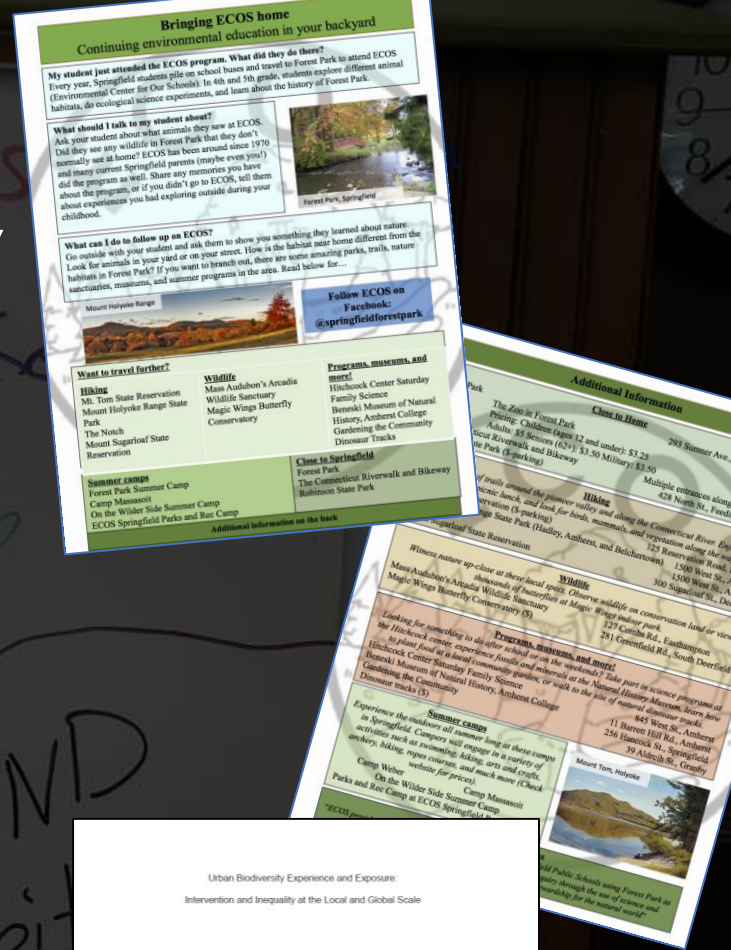
Welcome to ECOS Ms. Ces

Structure + Information

ECOS: Results

Adaptations

- Students were more likely to repeat ECOS activities with parents if parents had done ECOS
- Academic version: intergenerational biodiversity experiences are especially impactful for children
- Report and Take-home Resource for ECOS
- Thesis chapter and (eventual) publication for me



Teens for Trees (T4T): Backstory

- T4T found me through my UMass advisor
- Funding via the Trees for Watertown Board

Paige Warren <pswarren@eco.umass.edu>

to David, Evan ▾

Hello David,

It was a pleasure to meet you yesterday as well! I'd love to rekindle some of our Boston work at some organization to partner with. Let me know how best to make some time to talk. During the academic year, it's challenging for me to get over to the Boston area, but I'll be more available for a visit in May. Alternatively, we could talk via phone or internet chat.

Evan Kuras (cc'd here) is the graduate student who is doing a program evaluation of an environmental education program in Springfield as part of his Master's. I mentioned you to him already, and I think he'll be very interested in talking with you.



Summer 2017 saw the first year of Trees for Watertown's *Teen Tree Stewardship Program* (renamed *Teens for Trees*). This unique project enrolled six local teenagers in learning about, caring for, and advocating for the town's urban forest (see bit.ly/ttspbos and fwteensfortrees.org). Last year teens assisted the tree warden in collecting data about the condition of street trees, went on field trips in Watertown and the greater Boston area, created advocacy material to educate the public, and presented their understanding of trees to the public at the Watertown Farmers' market.

This year's program has four main goals:

- 1) To furnish the town with an up-to-date inventory and data of its current urban forest makeup and cover.
- 2) To care for public trees through pruning, watering, and other basic maintenance.
- 3) To raise public awareness about the economic, health, and environmental benefits of urban trees through outreach and education.
- 4) To provide meaningful educational and leadership opportunities in environmental and civic issues for a diverse group of Watertown teenagers.

Trees for Watertown is looking for a program evaluator to:

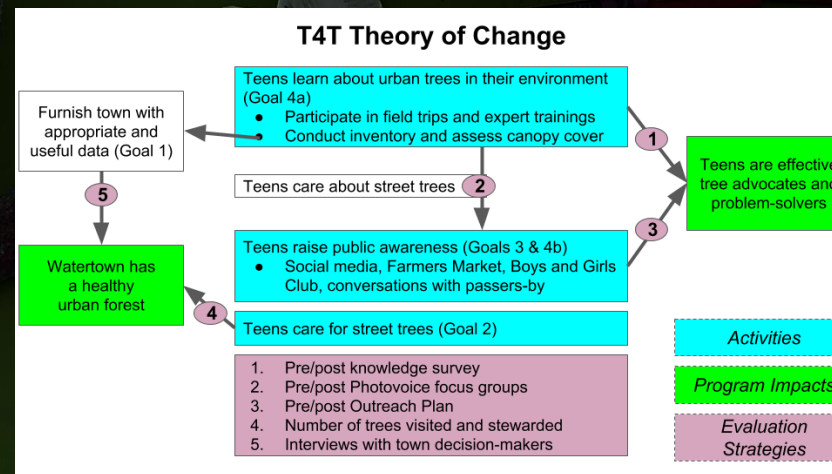
- Create measurement tools and instruments to evaluate the the project's ability to meet these goals by late April.
- Collect data on the project before, during, and after the program.
- Furnish the board of Trees for Watertown with a detailed report that lays out:
 - The methodology employed
 - The successes and challenges of the program
 - Future areas for growth

T4T: Identifying stakeholder goals

- T4T Goal: Evaluate program's ability to meet its goals of growing knowledgeable teen tree advocates; identify successes, challenges, and opportunities for growth

What happened next:

- Worked with T4T to develop logic model (ask me about this later)
- Designed, implemented, and analyzed pre/post survey and photovoice activity focusing on measurable aspects of above goal



T4T: Results

- Program met its goals, overall
- Promising opportunity: develop teens into “tree ambassadors”
- Report and 1-Pager
- Experience, paid job, and resume booster for me!

Final Report: Trees for Watertown's Teens for Trees Program Summer 2018

Compiled by David Meshoulam, Program Coordinator, Evan Kuras, Program Evaluator, and Libby Shaw, President of Trees for Watertown.

For more information please contact David Meshoulam at david@tfwteensfortrees.org or Libby Shaw at alshaw@mit.edu



www.tfwteensfortrees.org

Resources: Participating in Research



- Find a professor or graduate student (anyone here?)
 - Relevant disciplines: Biology, Ecology, Natural Resources, Conservation, Geography, Education, Urban Planning, Landscape Architecture, etc.
 - Look for “public” professors and build relationships over time
- Key frameworks: Broader Impacts, Outreach, Public Engagement
- Write yourself into their grants
- Know how research partnership will benefit your organization

Resources: Engaging in Evaluation



- If you don't already have the internal capacity...
- Build evaluation into your grants or grow institutional support up the food chain
 - Write in the specific evaluator/firm or seek competitive proposals
- Massachusetts options:
 - Center for Youth and Communities at Brandeis University (talk to Alan)
 - Find independent consultants (anyone here?)
 - Nonprofit Consultants Network (Greater Boston)
- Consortium model
 - Work with an MBA or non-profit management class
 - Apply for a grant from the American Educational Research Association

What is nature connection?
How do we measure nature connection?
What are barriers to nature connection?



Perrin, J.L. (2017). Recognizing Connection to Nature: Perspectives from the Field. *Applied Environmental Education and Communication*, 17:1, 3-13.

Perspectives from the Field



■ Interviews(100%)

What is connection?



How do you measure it?

Barriers to Measurement

Barriers to Measuring Connection to Nature in the Field

“I don’t feel like anyone feels like they have a grasp on how STEM is being addressed in our organization. We are not driven by STEM. We’re just trying to find a common language so the school will say, yes, and the funder will say, yes. That is part of the motive for us to do this process. If we can find our own nature connection oriented language that allows us to measure the impact of what we’re doing, I think a school would happily say, yes to those things. We had our own jargon years ago and that definitely didn’t work, so now we are adopting the jargon of the school system.”

- Participant #16

Barriers to Measuring Connection to Nature in the Field

“I think the outcomes that are most difficult are the ones that are not really associated with STEM, not really associated with a formal curriculum, that are informal, and are really just meant to connect people and have them develop this relationship.”

- Participant #2

Building a Resource Guide

- Ideas to Consider:
 - Is there a Spectrum of Nature Connection Outcomes?
 - How might these outcomes build upon one another?
 - How do we consider age of participants, partner schools/agencies goals, length of program, and location of program when thinking about these outcomes?
 - If you were involved in designing this connection to nature resource guide for practitioners, what would you include?

Research group convenes at 2018 NAAEE conference

- A team of academic researchers (led by Stanford University and University of Florida), the Children & Nature Network (C&NN), and NAAEE collaborated to identify strategies to characterize connection to nature in a variety of contexts and explore practitioners' needs for measuring this concept as a basis for developing a *Guide to Conceptualizing Connection to Nature Measures, Assessments, and Strategies*, which will be available online and through workshops offered through the C&NN and NAAEE networks.
- We have completed a rough draft of the Guidebook and are now seeking feedback from various environmental education practitioners.
- Guidebook should be available at the end of 2019



Academic Measures Related to Connection to Nature

Table 1

Concepts related to connection to nature and their measures.

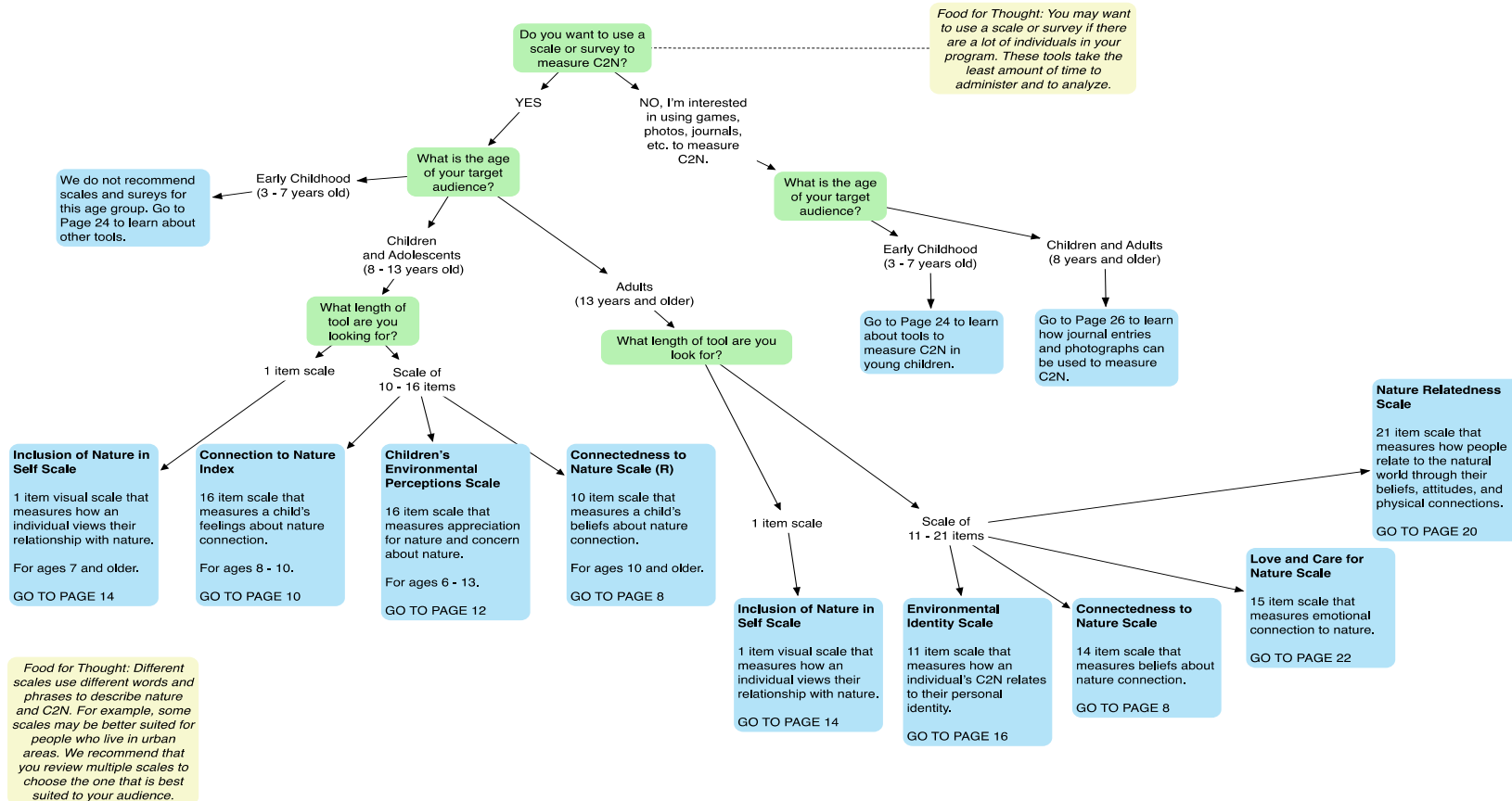
Concepts	Measure format	Sample items
Commitment to nature (COM; Davis et al., 2009)	Participants indicate their agreement with 11 statements	I feel very attached to the natural environment. I expect that I will always feel a strong connection with the environment.
Connectedness to nature (CTN; Mayer & Frantz, 2004)	Participants indicate their agreement with 14 statements	I often feel a sense of oneness with the natural world around me. My personal welfare is independent of the welfare of the natural world.
Connectivity with nature (CWN; Dutcher et al., 2007)	Participants indicate their agreement with 4 statements + select a diagram which best describes their relationship with nature	I feel a sense of oneness with nature. I see myself as part of a larger whole in which everything is connected by a common essence.
Emotional affinity toward nature (EATN; Kals et al., 1999)	Participants indicate their agreement with 16 statements	By getting in touch with nature today I have the feeling of the same origin. Whenever I spend time in nature nowadays I do not experience a close connection to it.
Environmental identity (EID; Clayton, 2003)	Participants indicate their agreement with 24 statements	Being a part of the ecosystem is an important part of who I am. I think of myself as a part of nature, not separate from it.
Inclusion of nature in self (INS; Schultz, 2001)	Participants select a diagram which best describes their relationship with nature	–
Nature relatedness (NR; Nisbet et al., 2009)	Participants indicate their agreement with 21 statements	I am not separate from nature, but a part of nature. I always think about how my actions affect the environment.

Kam, T. (2013). Concepts and measures related to connection to nature: Similarities and differences. *Journal of Environmental Psychology, 34*, 64-78.

Feedback: Do you have any suggestions on Decision tree; What is missing? What else would be helpful (see decision tree handout)?

Measuring Connection to Nature: Find the Right Tool!

This flowchart is designed to help you find the right tool (or tools) for measuring connection to nature (C2N) in your target audience. Before using this flow chart, you should first decide what you are really trying to measure! You may also be interested in measuring another attribute, like environmental attitudes or environmental values. If you are interested in measuring environmental attitudes, look at the resources in Appendix A of this guide.



Example from the Guidebook

- WHAT DOES IT MEASURE?
- The Connection to Nature Index (CNI) was designed to measure children's feelings about their connection to nature. The CNI is based on previous research regarding children's environmental attitudes and builds on the Connectedness to Nature Scale developed by Mayer and Frantz (2004). Specifically, the CNI measures four factors that influence how children feel about their connection to nature: 1) enjoyment of nature, 2) empathy for creatures, 3) sense of oneness with nature, and 4) sense of responsibility toward nature. The tool can also be used to predict children's interest in participating in nature-based activities and in performing environmentally friendly behaviors. Authors believe the tool is helpful because youth whose family valued nature, who had previous experience and knowledge of nature, and who lived near nature scored higher on the index, which would be predicted by other studies.

Feedback: Suggestions on Guidebook layout (see handout "Connection to Nature Index")

Language in Guidebook

Feedback: What do these words mean to you?

- Constructs
- Affective
- Cognitive
- Self-efficacy
- Convergent
- Discriminant
- Psychometrics
- Self-concept
- Environmental behavior
- Egalitarianism

Where to send feedback?

Please email to:

jperrin@lesley.edu

Birder Behavior

Summary of results from 2017 survey



Lucy Gertz
Mass Audubon Education Department
March 2019

Objectives of Birder Survey

- Collect baseline information on birders' awareness about the drivers of decline of birds
- Get information on birders' understanding of the relationships between declines, impacts, and personal actions
- Collect respondents' assessment of the level of engagement they say they have with personal actions that could help mediate impacts to birds
- Assess how willing respondents say they are to engage further in personal actions that could help support local and global bird populations



Respondents

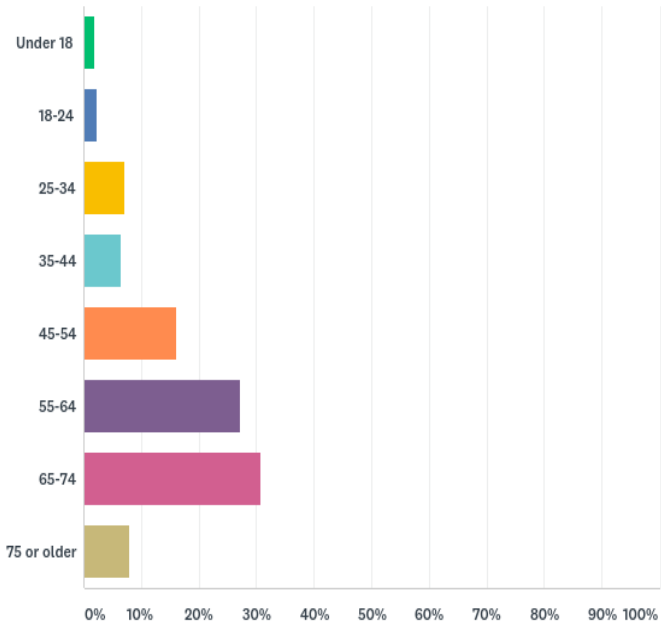
MAS Birders

- Attendees of 2017 MAS Birder's Meeting
- Birders associated with several MAS sites
- Students in MAS Birder's Certificate Program
- Bird-A-Thon and Bird Atlas Volunteers
- Readers of Warbler, blog, website

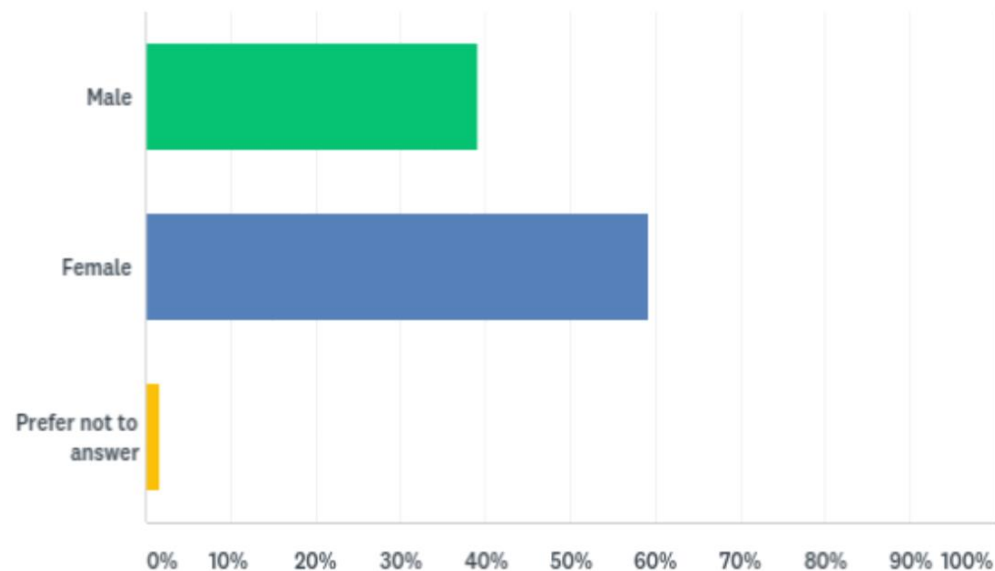
Beyond MAS

- Multiple birding clubs – newsletters, list serves
- Bird Observer
- Listeners to “Talking Birds” radio program

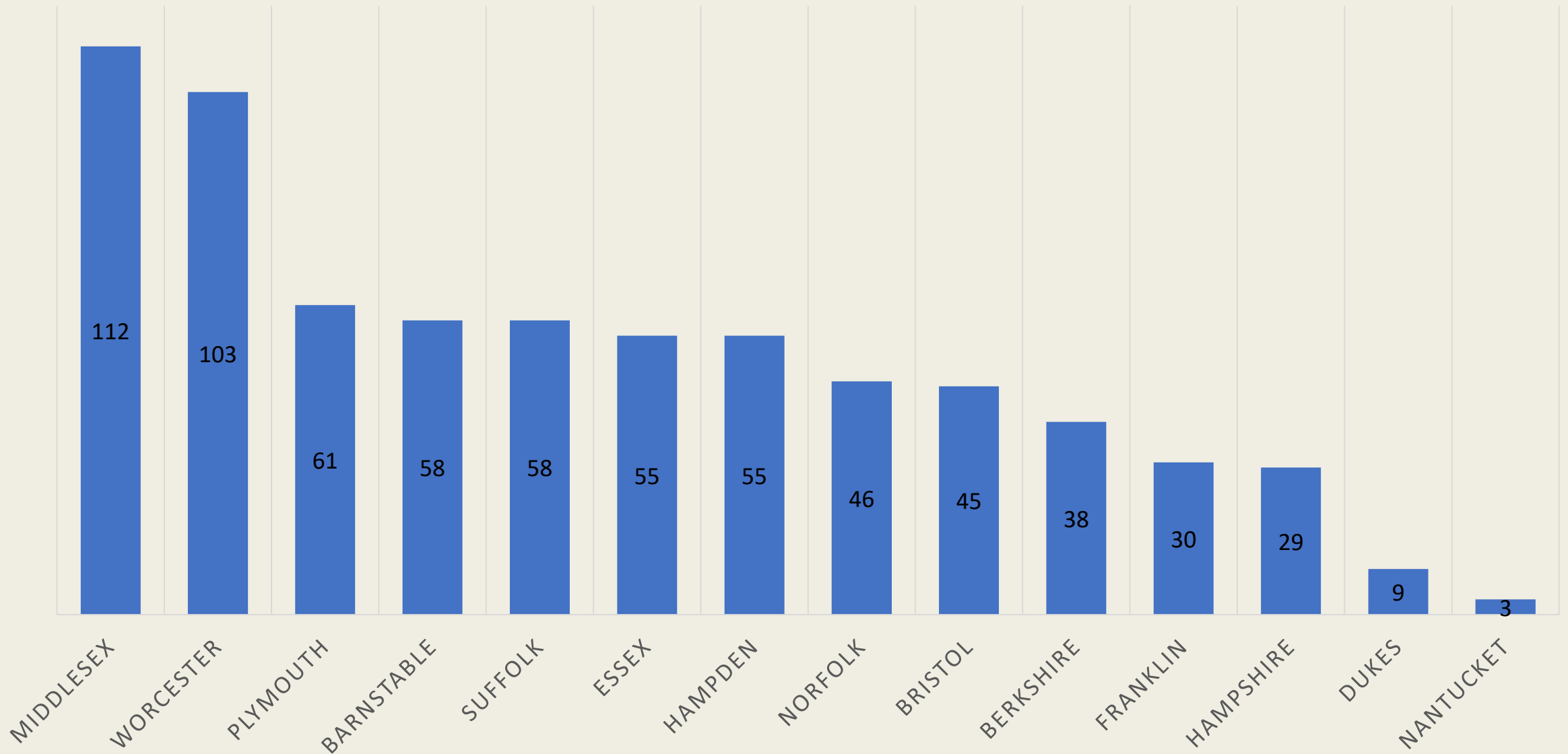
Age (n=561)



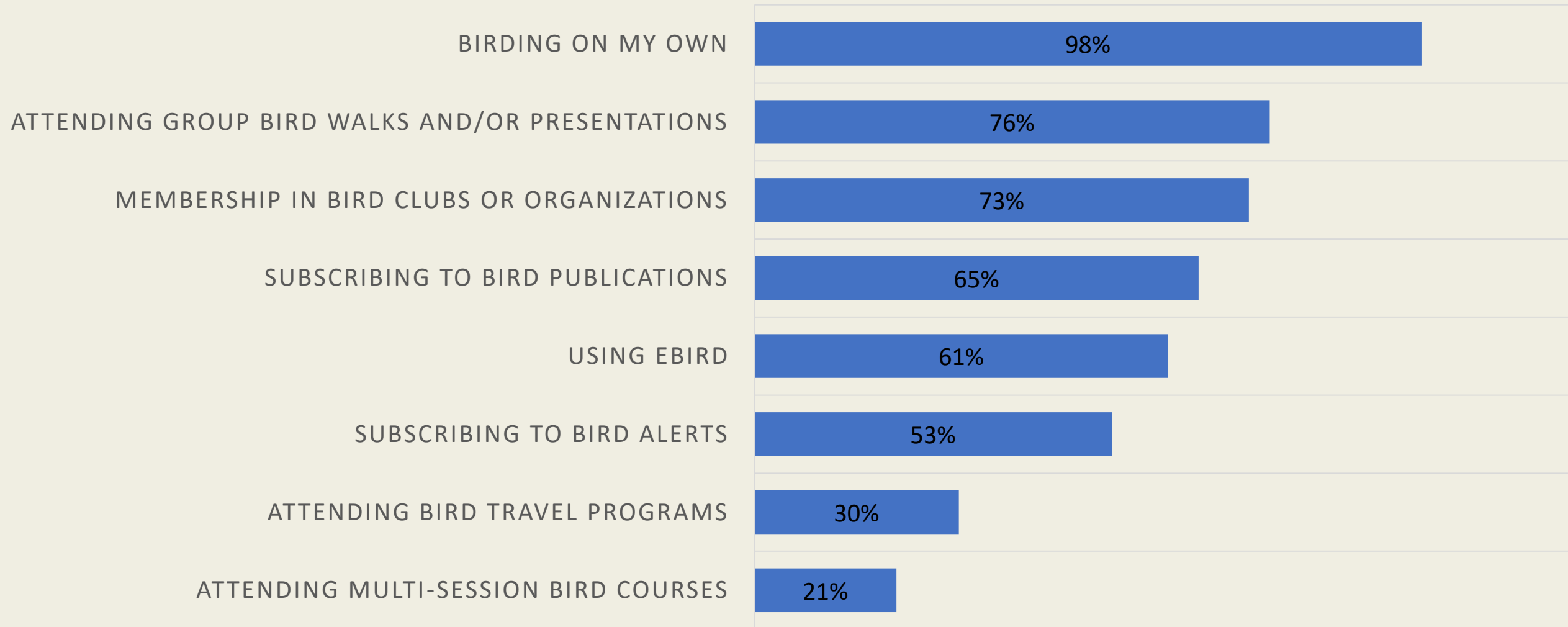
Gender (n=544)



Zip Code by county (n=549)

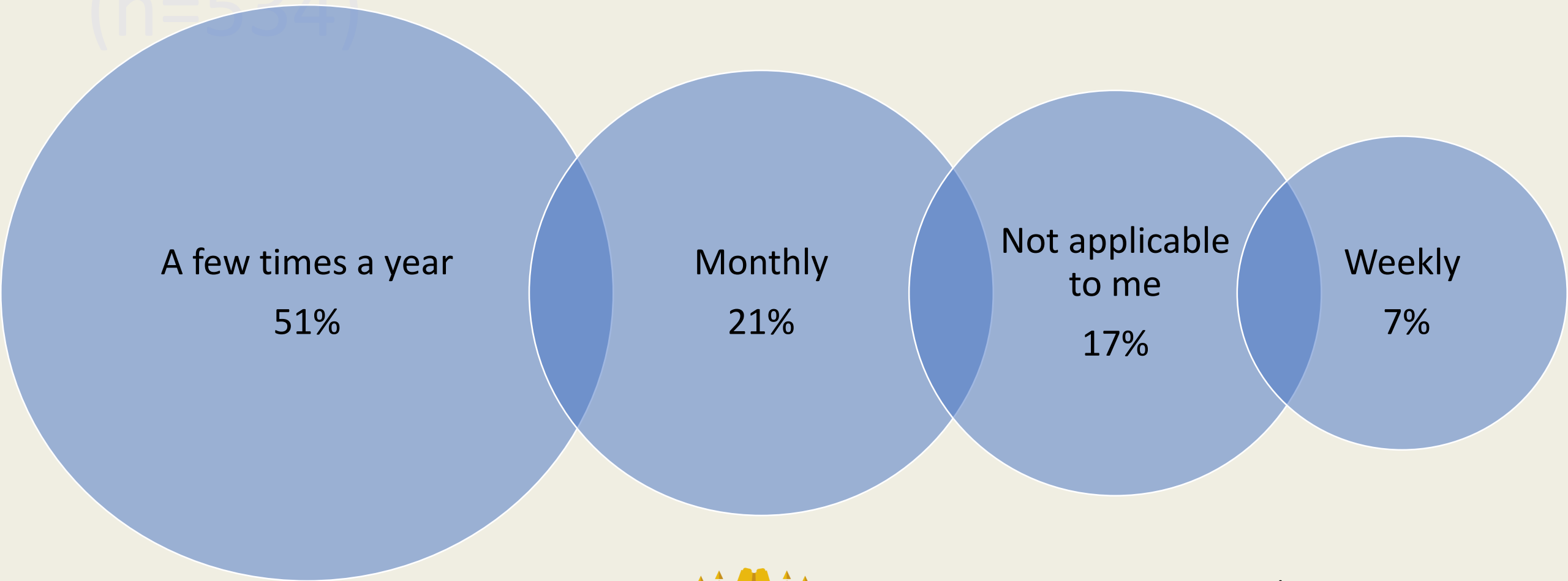


Their bird-related activities (n=556)



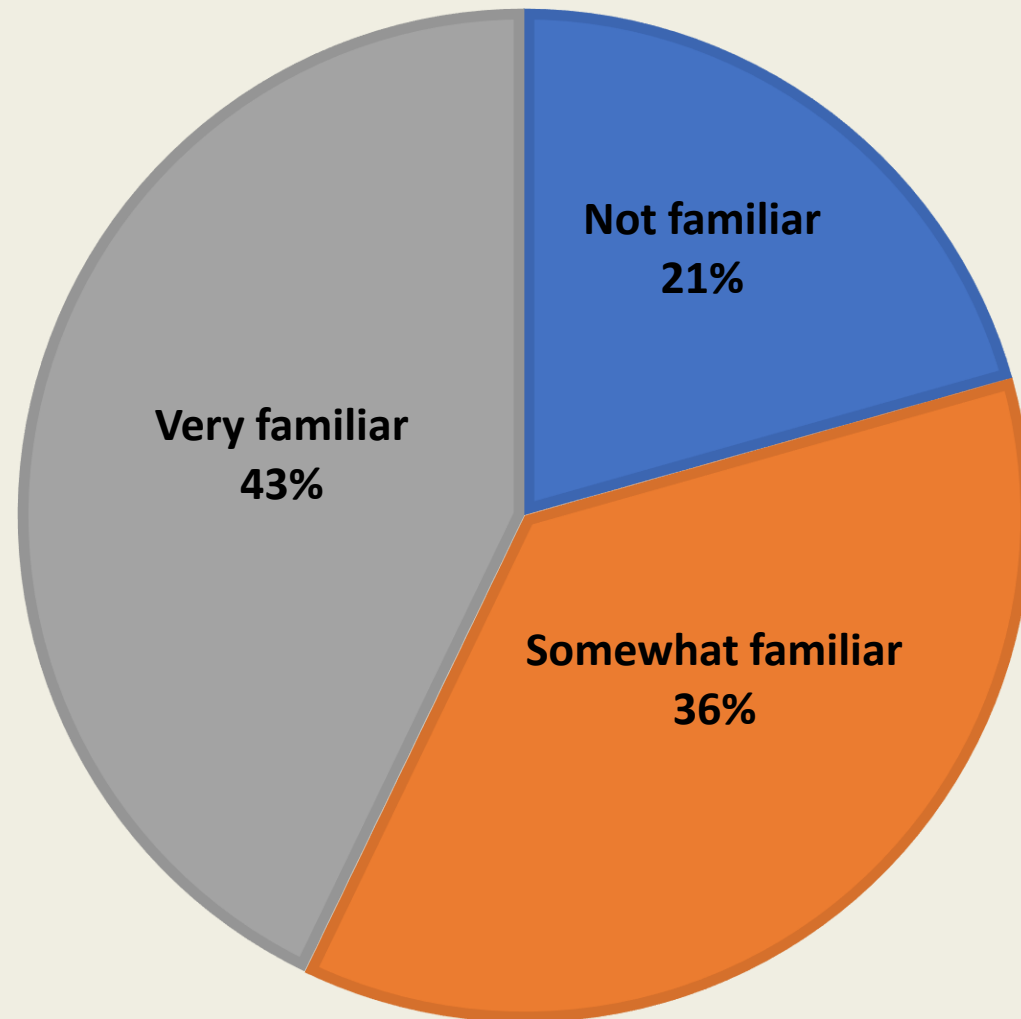
How often they attend group bird walks and/or presentations

(n=534)

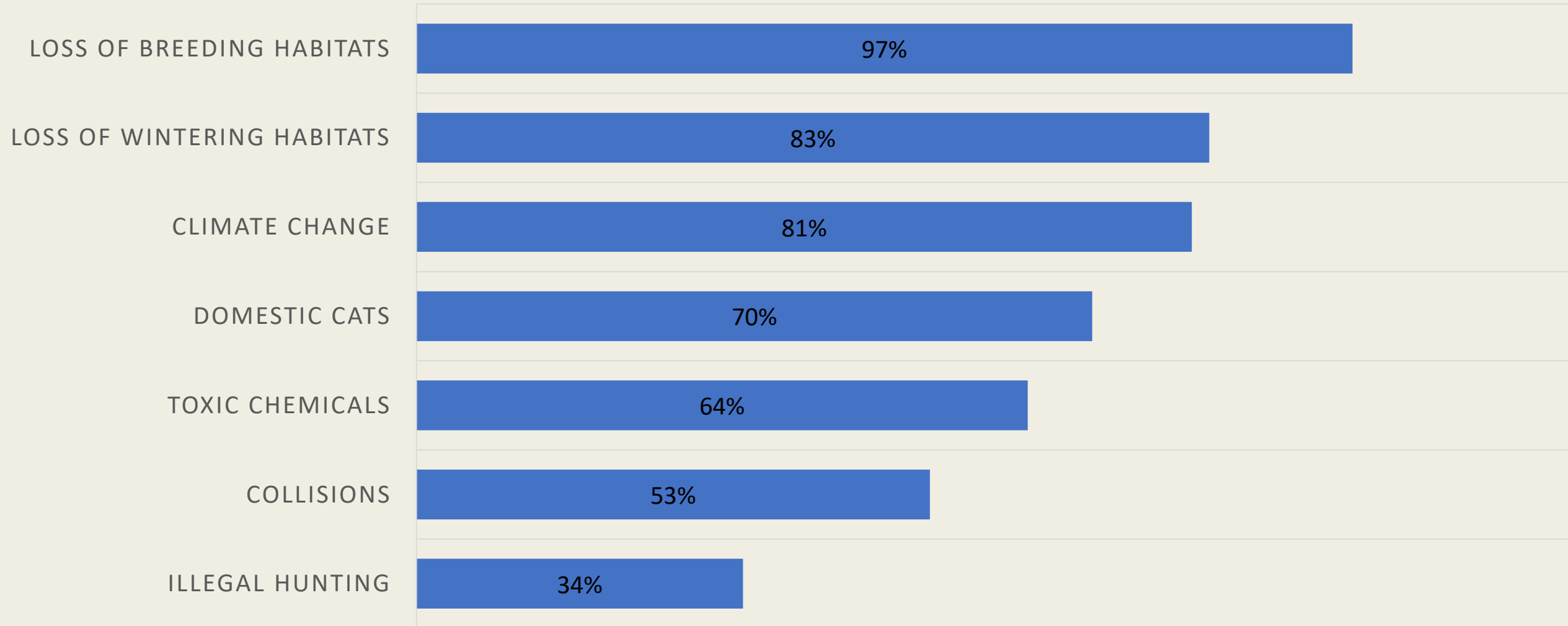


Daily – no responses

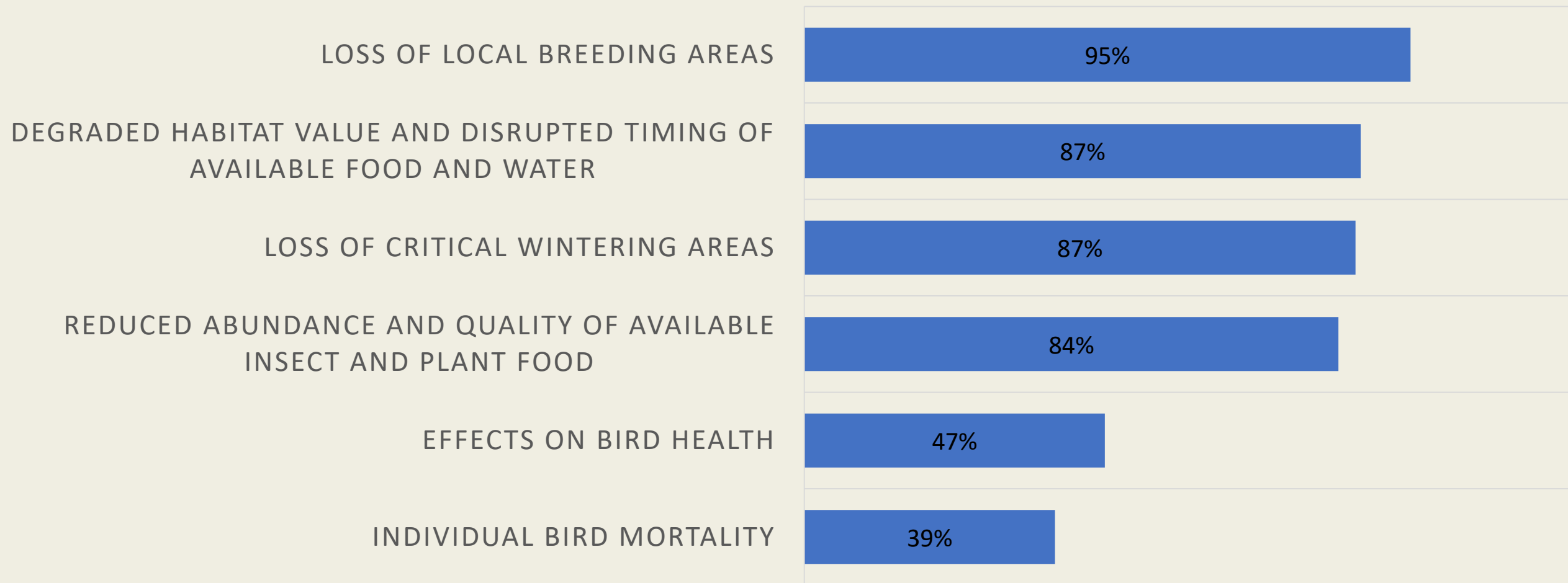
How familiar they are with the American Birding Association's Code of Birding Ethics (n=315)



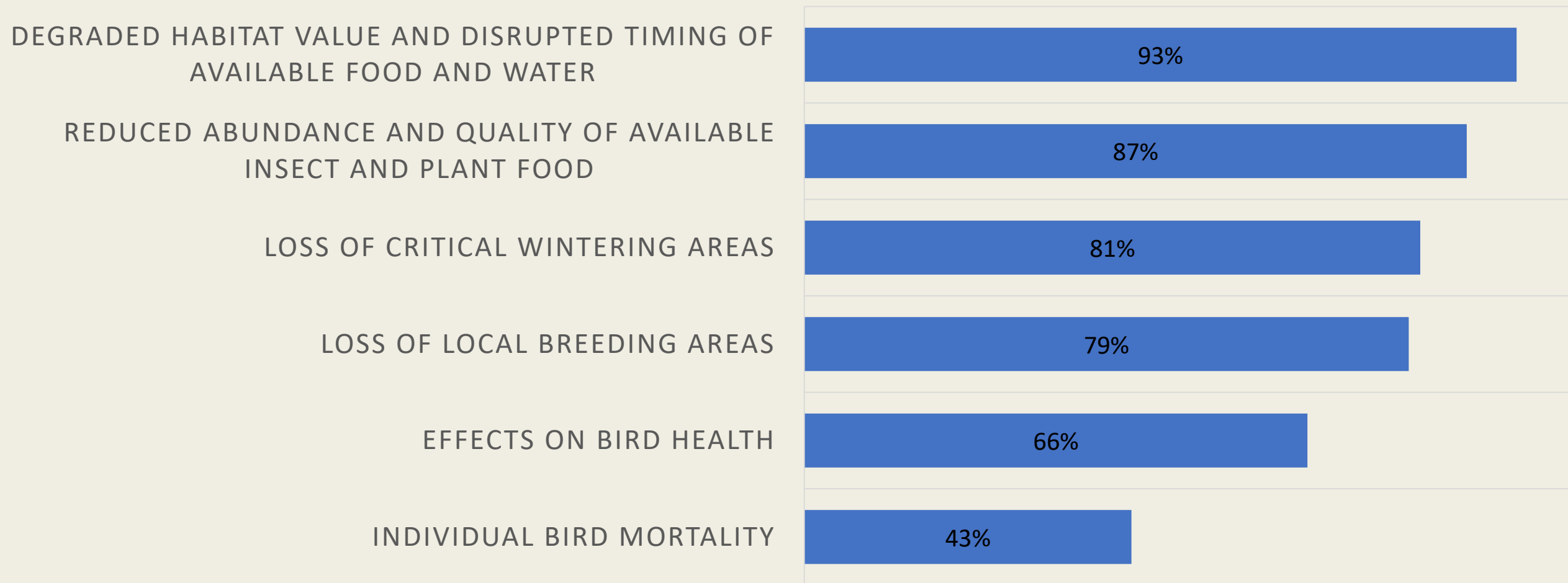
Which of the following are major drivers of decline for local & global bird populations? (n=550)



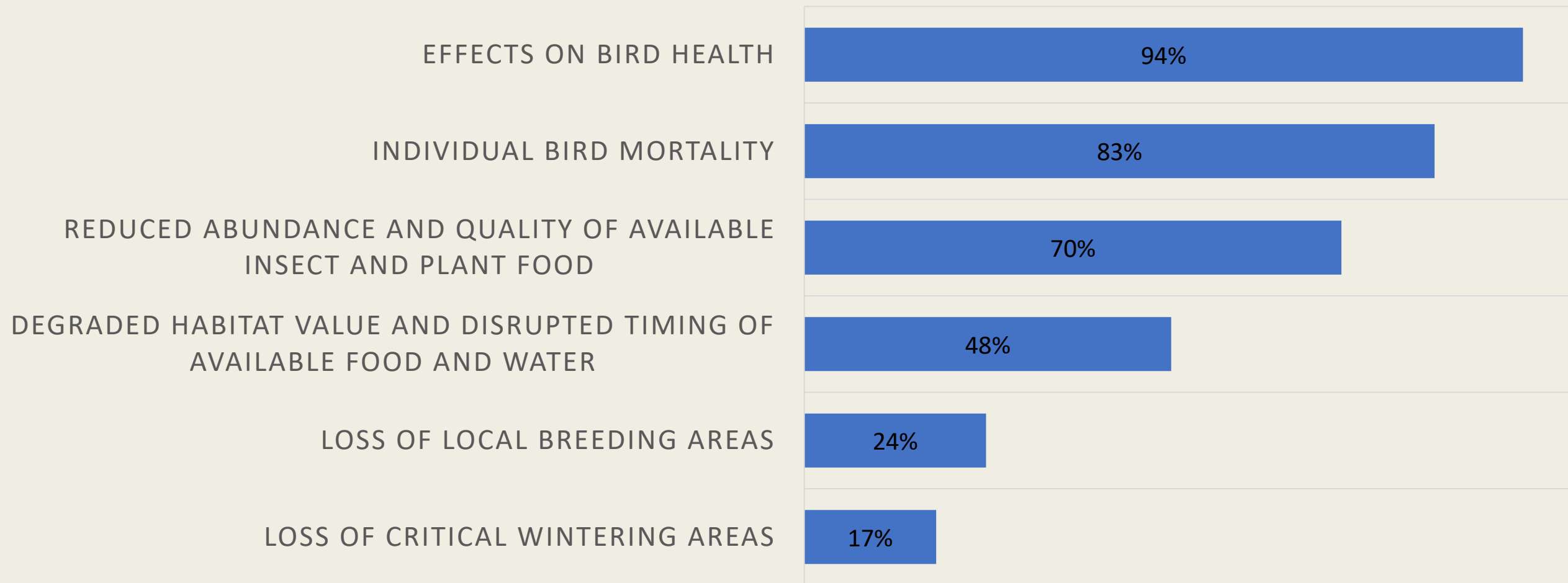
Impact of habitat loss



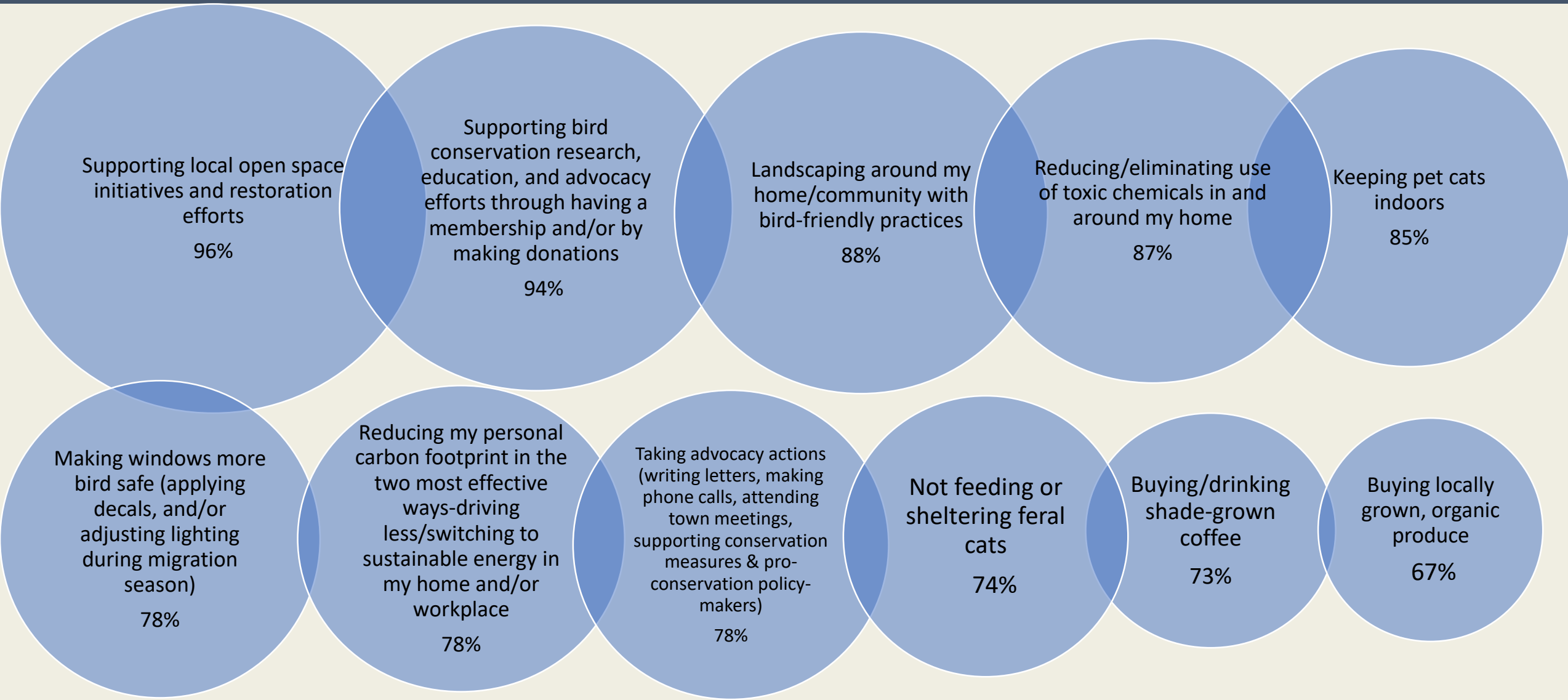
Impact of climate change



Impact of toxic chemicals



Which of these individual actions can help mediate the impacts/threats to bird populations? (n=494)



Impact of supporting local open space initiatives and restoration efforts (n=367)

PROVIDES HABITAT AND RESOURCES (FOOD, WATER, COVER) FOR LOCAL BREEDING BIRDS

88%

HELPS PRESERVE CRITICAL HABITAT FOR MANY WINTERING BIRD SPECIES

84%

SUPPORTS PRO-CONSERVATION MEASURES AND POLICIES

81%

SUPPORTS LOCAL FARMLAND WHICH SERVES AS HABITAT FOR MANY BIRD SPECIES

53%

SLOWS THE IMPACTS OF CLIMATE CHANGE ON BIRD HABITATS, MIGRATION ROUTES, AND FOOD SOURCES

52%

REDUCES THE AMOUNT OF TOXIC CHEMICALS ON LAWNS AND ENTERING LOCAL WATERWAYS

33%

PREVENTS MORTALITY OF INDIVIDUAL BIRDS

30%

REDUCES PREDATION ON SONGBIRDS, ESPECIALLY SPECIES THAT FEED OR NEST ON THE GROUND

27%

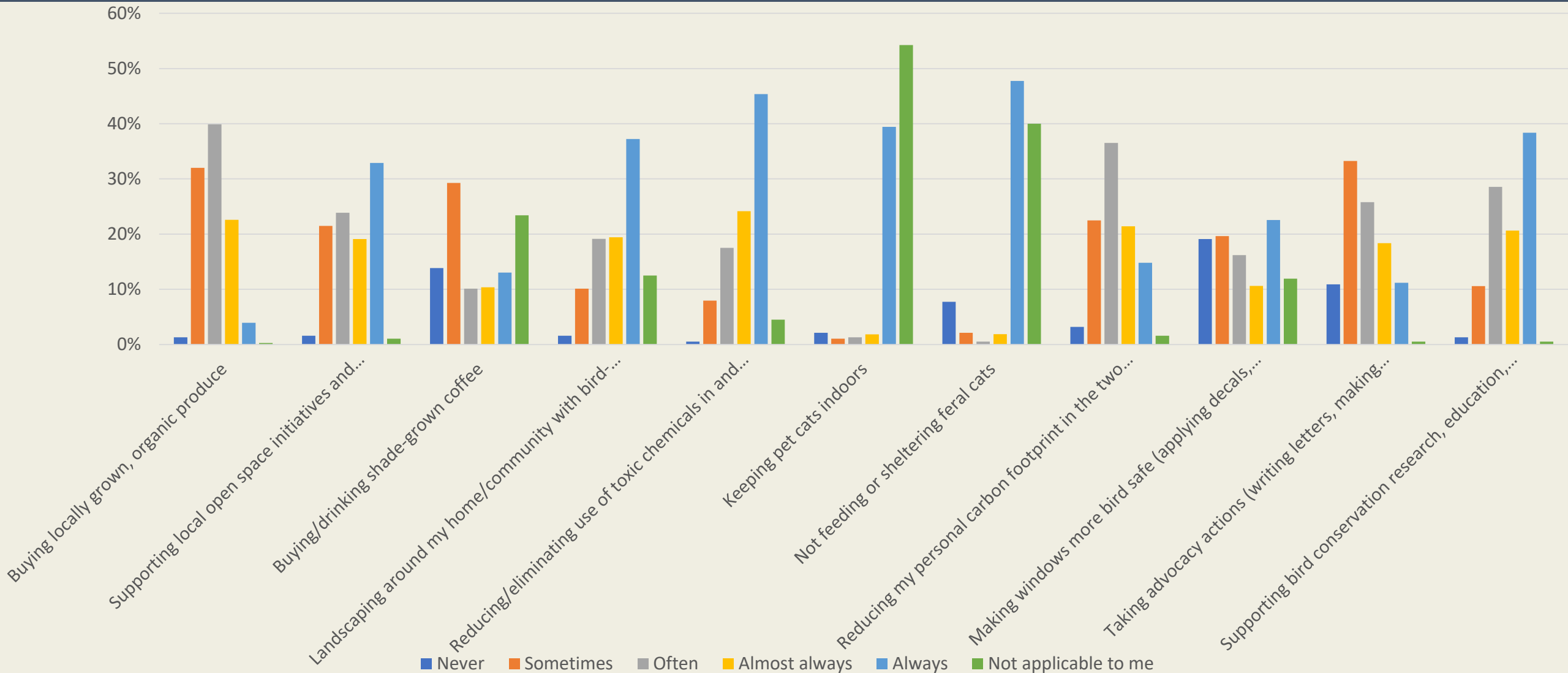
SUPPORTS SUSTAINABLE, ORGANIC AGRICULTURAL PRACTICES, REDUCES USE OF TOXIC PESTICIDES AND FERTILIZERS

25%

REDUCES CARBON EMISSIONS REQUIRED FOR LONG-TERM STORAGE AND TRANSPORTATION OF FOOD PRODUCTS

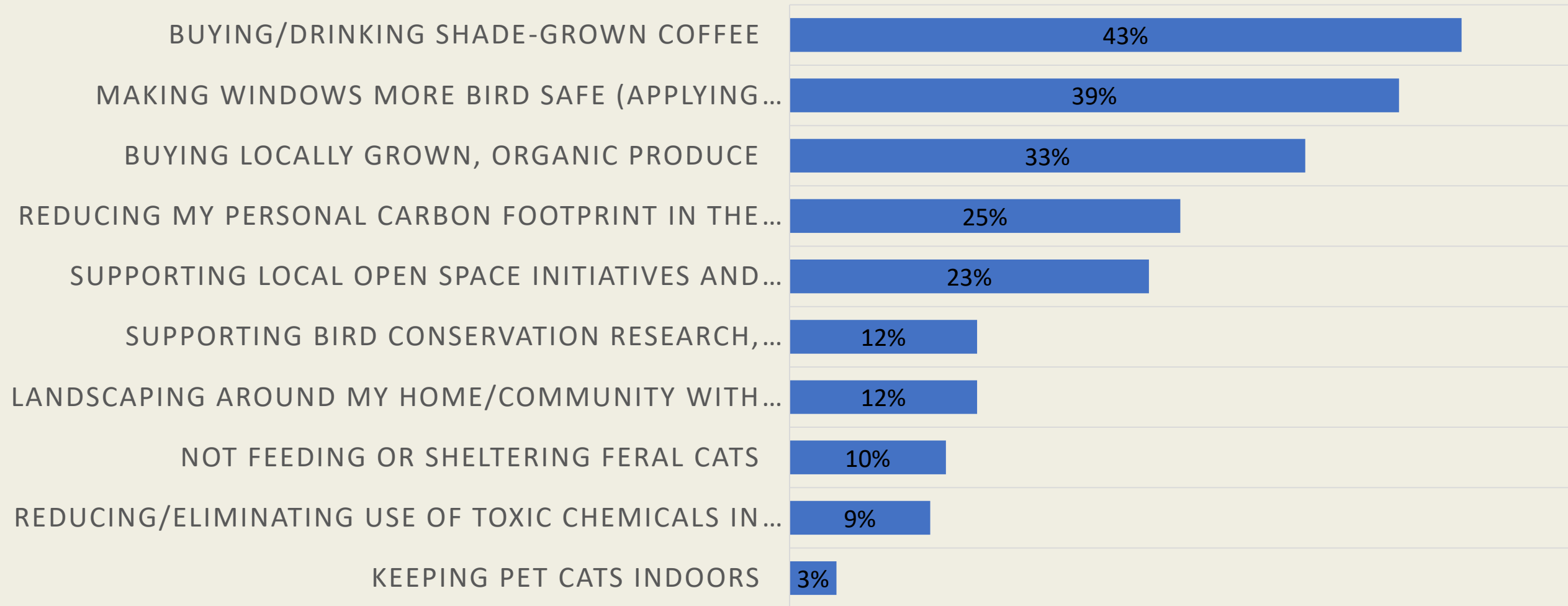
16%

To what extent do you currently practice the following conservation actions? (n=382)

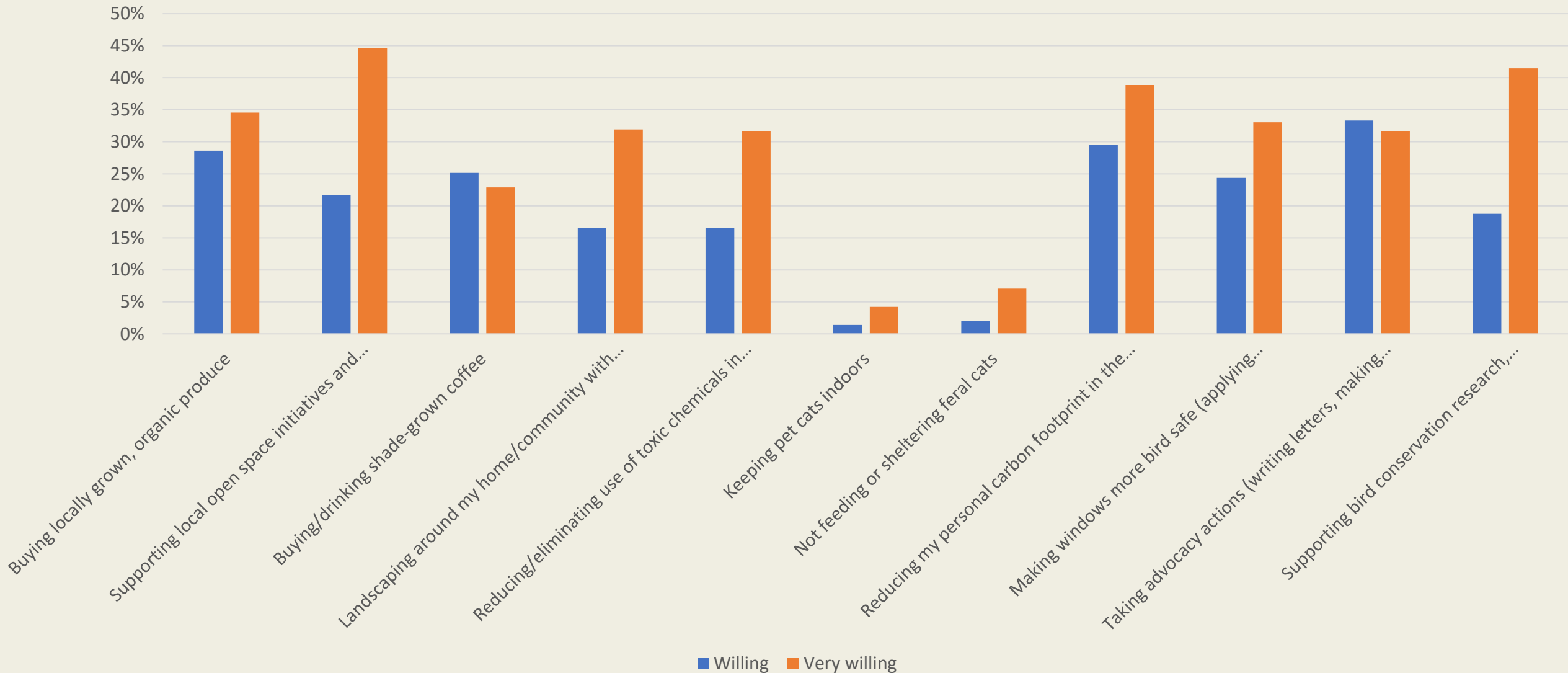


To what extent do you currently practice the following conservation actions?

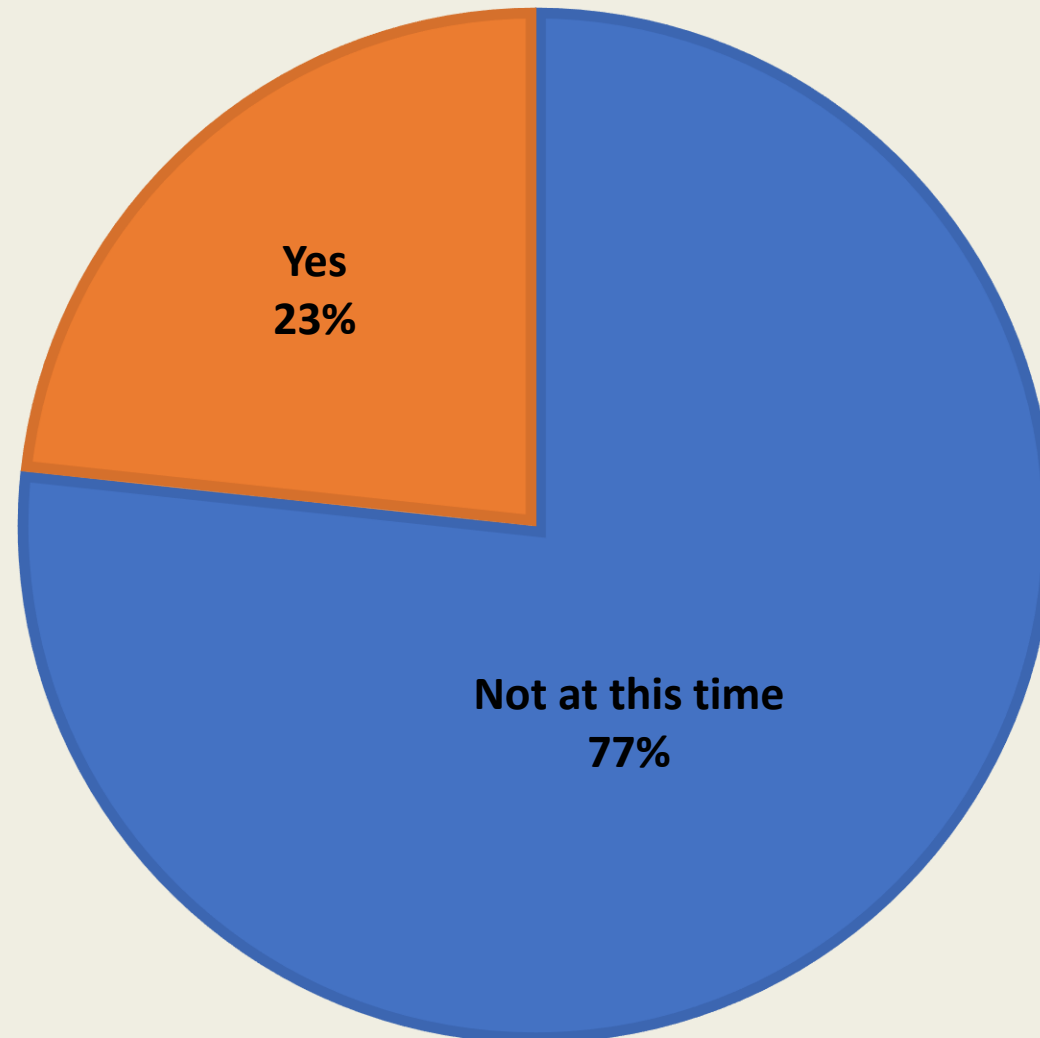
NEVER & SOMETIMES



In order to support local and global bird populations, how willing would you be to engage further with any of these conservation practices?



Would you be interested in helping develop and deliver conservation action information and resources to fellow birders?
(n=352)



What do we now know?

- Birders take surveys
- Which major drivers of bird decline the respondents were most familiar with – the loss of breeding/wintering habitats and climate change – and their understanding of the associated impacts to birds
- Respondents indicated how much they understood about personal actions that could mediate certain impacts to birds
- Respondents reported on their current engagement with personal actions and how willing they would be to engage further with certain actions



What could we do with this information?

- Prepare a module for birders focused on personal actions they can take
- Utilize “Community Based Social Marketing” approaches
- Incorporate Conservation Psychology and Social Science research findings
- Have the module delivered by credible messengers in appropriate settings
- Measure our progress in promoting pro-conservation behavior changes to birders
- Learn about other target audiences’ conservation knowledge, engagement with actions, willingness to engage further



For example...

Incorporate Conservation Psychology and Social Science research findings

- ❑ Craft messaging to be relevant, applicable, and relatable to the target audience
- ❑ Have the messaging be delivered by credible messengers in appropriate settings
- ❑ Research-based tools and techniques: take-home info, prompts, follow-up
- ❑ Use approaches that are meaningful to the birding community:
 - This is important to do because you care about birds
 - Competition
 - Testimonials
 - Encouragement and support from fellow birders



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THANK YOU!

Lucy Gertz
Mass Audubon Education Department
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