



# Retention and Efficacy of Citizen Science Volunteers of the Texas Quail Index

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@QuailProfessor @UNTQuail @RPQRR



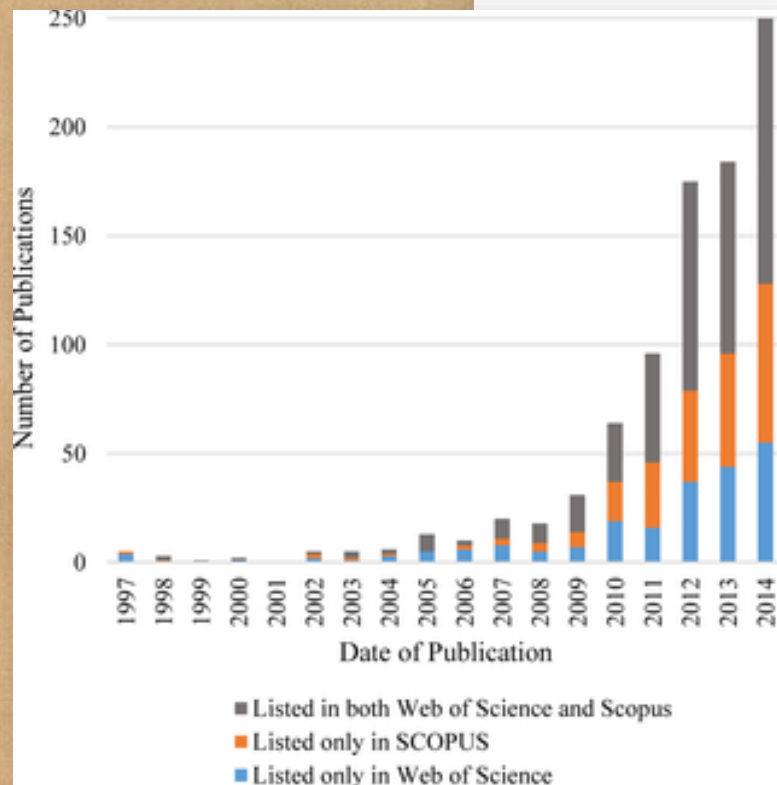
# Citizen Science

- Participatory monitoring or research
- Crow-sourced science, Low-cost science
- Scientific research conducted by non-professionals





# Citizen Science: A Growing Trend



RESEARCH ARTICLE

## An Analysis of Citizen Science Based Research: Usage and Publication Patterns

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Dramatic growth from 1997–2014 in publications featuring citizen science

# Citizen Science: Usefulness of Data

500

Peer-reviewed  
publications

North American  
Breeding Bird Survey

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Christmas Bird  
Count

Longest

Running

Largest

citizen-sci dataset



UNT Quail





# Citizen Science: Value


Biological Conservation 181 (2015) 236–244

Contents lists available at [ScienceDirect](#)

 **ELSEVIER**

**Biological Conservation**

journal homepage: [www.elsevier.com/locate/biocon](http://www.elsevier.com/locate/biocon)



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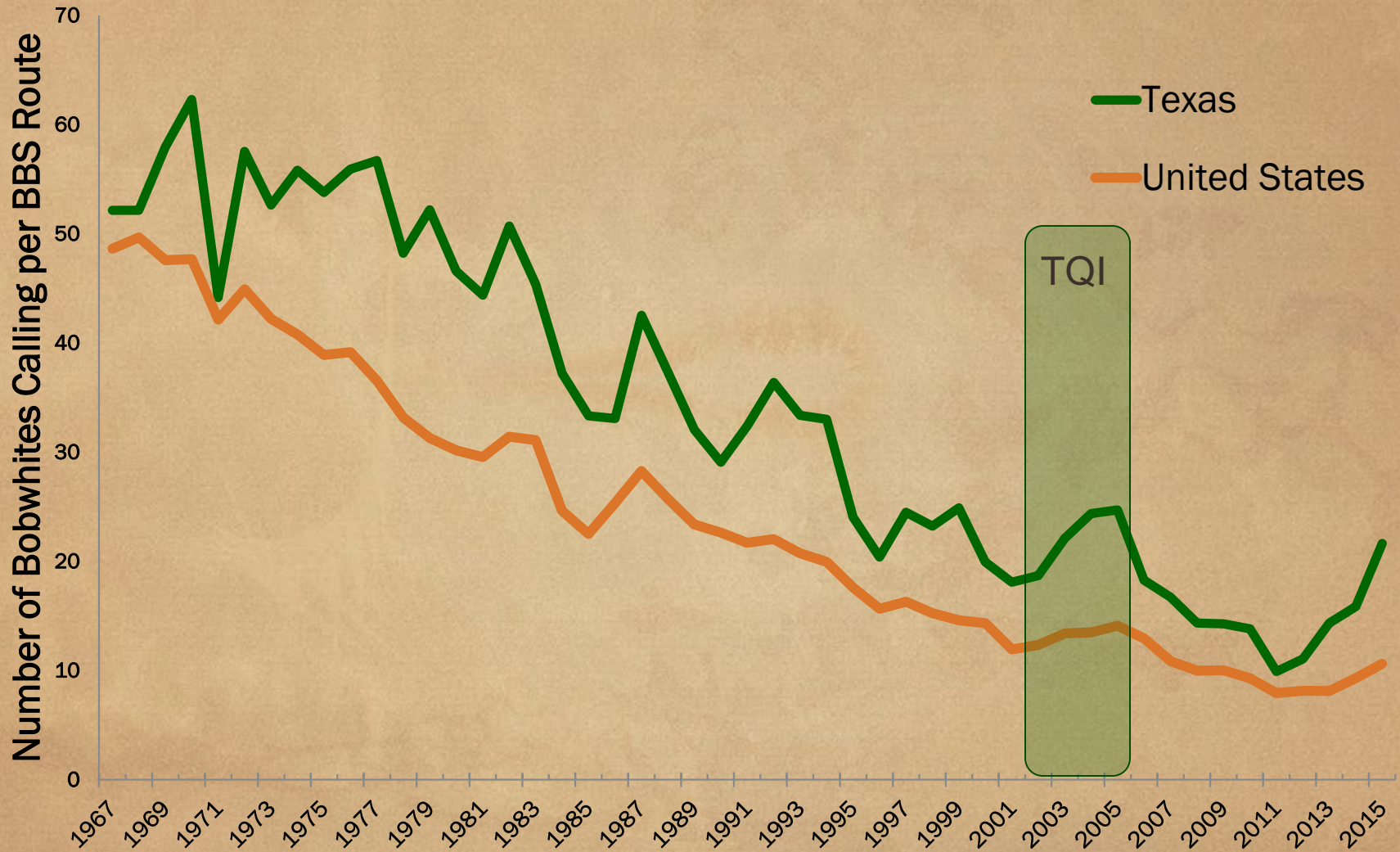
Global change and local solutions: Tapping the unrealized potential of citizen science for biodiversity research  CrossMark

E.J. Theobald<sup>a,\*</sup>, A.K. Ettinger<sup>a,1,2</sup>, H.K. Burgess<sup>b,3</sup>, L.B. DeBey<sup>a,5</sup>, N.R. Schmidt<sup>b,6</sup>, H.E. Froehlich<sup>c,7</sup>, C. Wagner<sup>c,8</sup>, J. HilleRisLambers<sup>a,9</sup>, J. Tewksbury<sup>a,4</sup>, M.A. Harsch<sup>a,10</sup>, J.K. Parrish<sup>c,11</sup>

# \$2.5 Billion

Amount volunteers contribute annually to biodiversity research

# BOBWHITE POPULATIONS TRENDS





# TEXAS QUAIL INDEX (TQI)

## THE TEXAS QUAIL INDEX: EVALUATING PREDICTORS OF NORTHERN BOBWHITE PRODUCTIVITY AND ABUNDANCE USING CITIZEN SCIENCE

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# TQI: Objective

1 Evaluate several indices as predictors of hunting season abundance

- Spring cock-call counts
- Forb species richness
- Simulated-nest fate
- Potential nest site density
- Scent station visitation rates
- Roadside counts





# TQI: Objective

## 2 Use Citizen Scientists and Teach them to:

- Monitor Indexes of Quail Populations
- Evaluate Habitat
- Learn More about Quail





# TQI: Problems

- Major participation declined after year 2

66%

dropped  
out of  
program

7%

datasets  
complete



# GOAL: Survey TQI Citizen Scientists

- Determine motives for staying in or leaving the program
- Identify characteristics of a reliable volunteer

66%

dropped  
out of  
program

7%

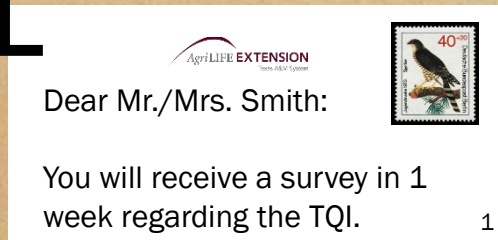
datasets  
complete



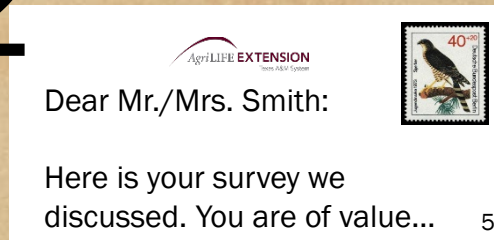
# Methods

- Mail survey to all TQI participants (n=76)
- Dillman's Total Design Method
- Motives, demographics, satisfaction, goals

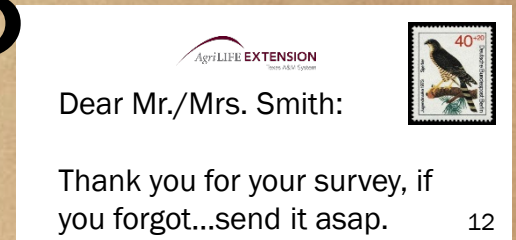
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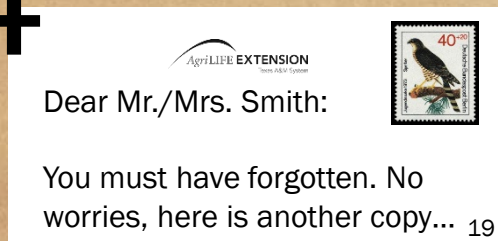
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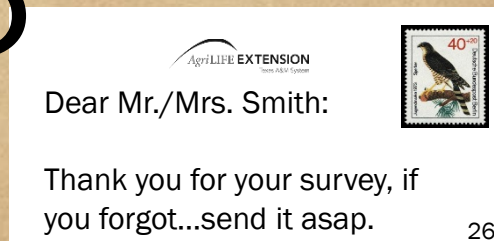
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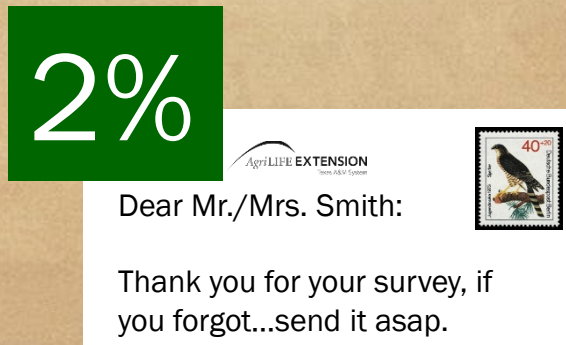
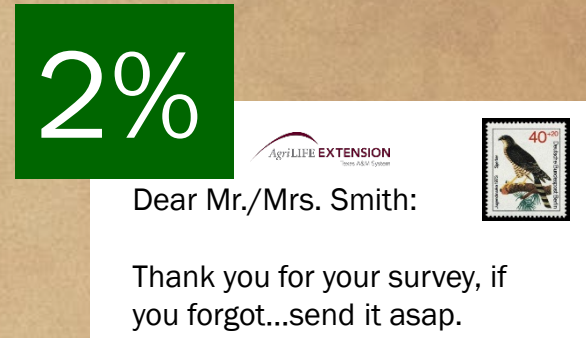
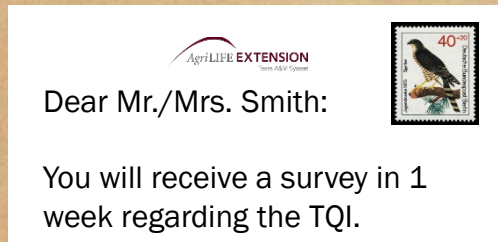
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# Results

- 84.3% Response Rate (n=59)
- Disengaged = 39
- Engaged = 20





# Results

- No difference in demographics between engaged and disengage participants
- Average Age: 49 ( $\pm 13.8$ )
- Gender: 93% Male
- College: 85% Degrees
- Occupation: 40% Landowners  
55% Agency Biologists  
5% Other volunteers



# Results

- No difference in prior experience between engaged and disengage participants
- Wildlife: 92% taken  $\geq 1$  wildlife class
- Citizen-Science: 15%



# Results

- No difference in motivation to join TQI between engaged and disengage participants
  - 72% To learn more about quail
  - 11% To contribute to scientific data
  - 9% Thought it would be fun
  - 8% Said it was part of their job



# Results

- No difference in satisfaction with TQI between engaged and disengage participants
- 75% Satisfied with communication
- 85% Satisfied with quality of training
- 90% Satisfied with overall experience



# Results

- No difference in landowner goals between engaged and disengage participants
  - 50% Ranching
  - 28% Hunting
  - 14% Research
  - 8% Pleasure



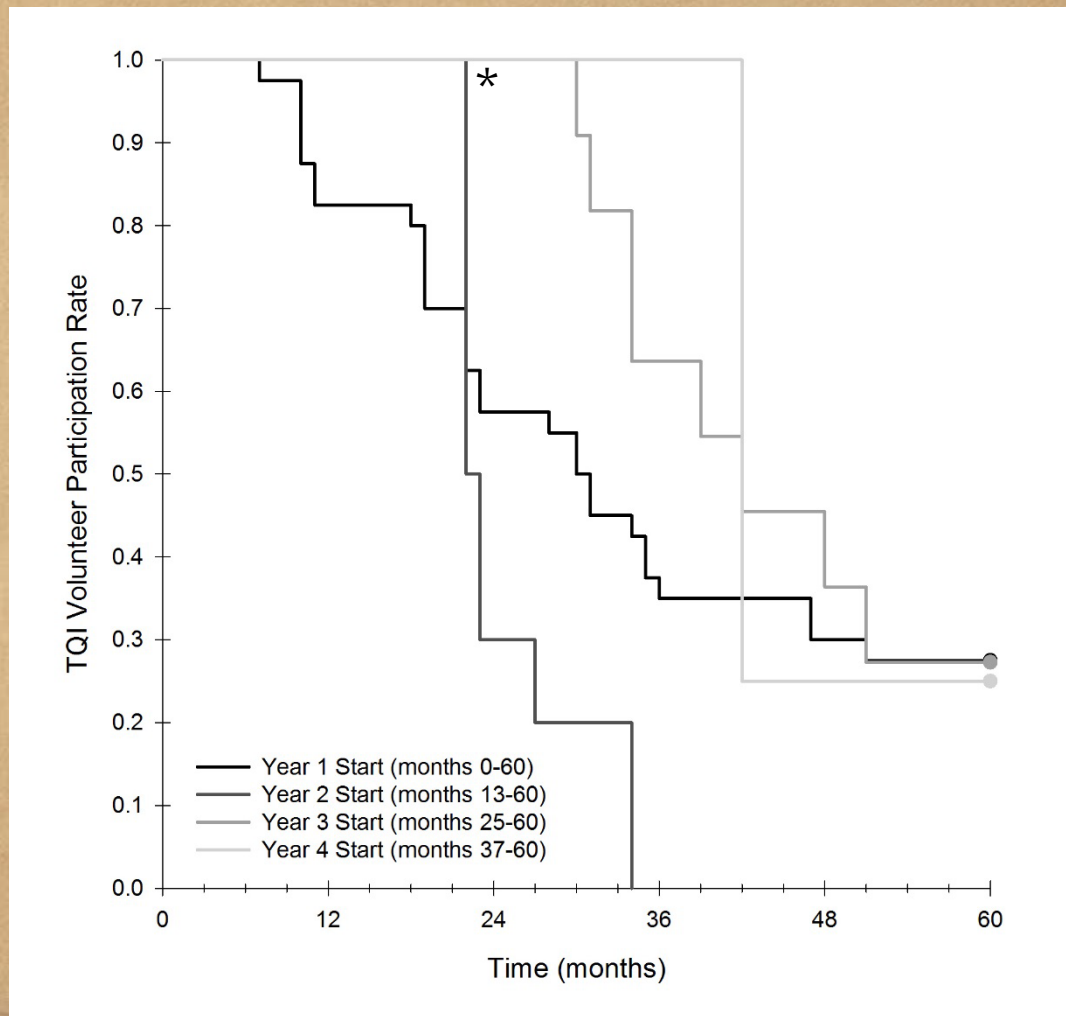
# Results

- High Turnover Rate: 66% Disengaged
  - 62% Too much Time
  - 20% Changed Jobs/ Left Area
  - 13% Too much Work
  - 5% Believed data did not matter



# Results

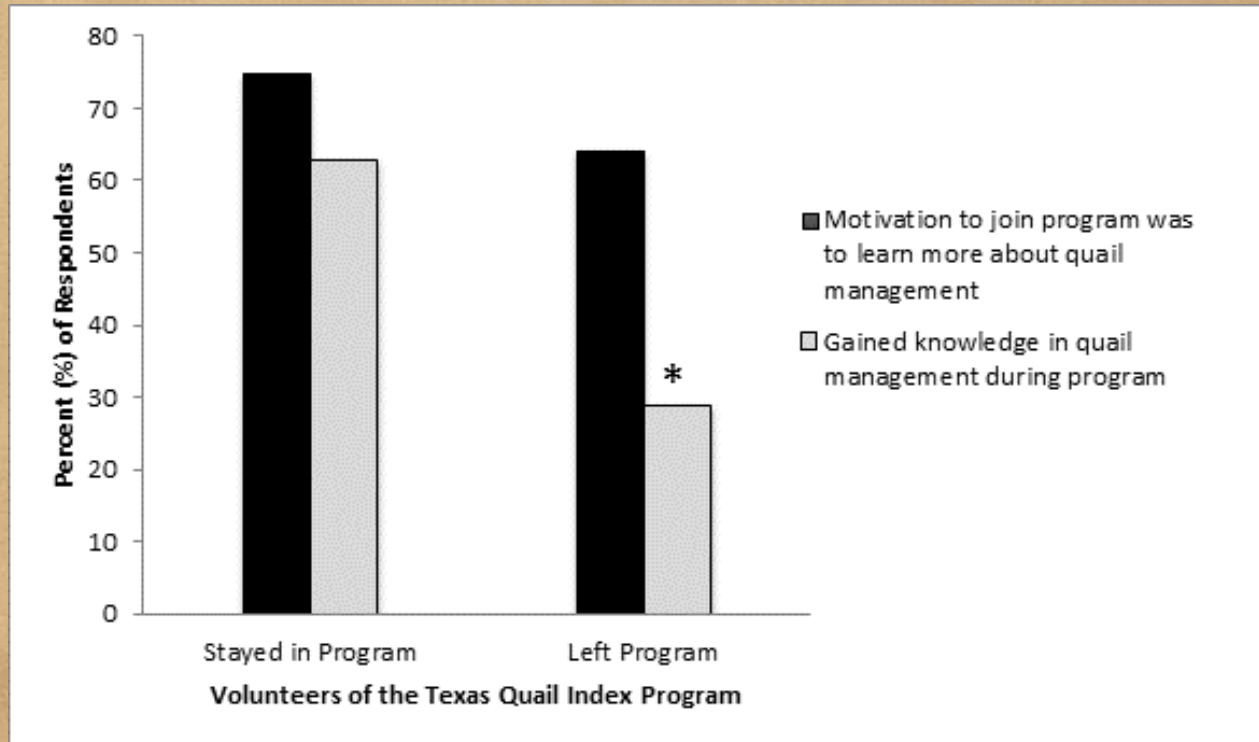
- High Turnover Rate: **66% Disengaged**





# Results Objective 2

- More Disengaged (71%) reported not learning more about quail compared to Engaged (47%)





# Discussion

- **DROP OUTS ARE NORMAL**

- Citizen Scientists often become exited about the project, over commit, become too busy, and quit.
- TQI was time consuming, did not reimburse costs, hard work.
- **Recommend:**
  - Factoring in drop-out rates/back up plan
  - Reimbursements



# Discussion

- MATCH MOTIVES TO GOALS

- TQI programmatic goals did not match up to volunteer motives
- Motives can change during project
- **Recommend:**
  - Survey volunteers prior to project and frequently thereafter.
  - Match motives to assignments accordingly.



# Discussion

- **KEEP TASKS SHORT AND WITHIN INTEREST OF VOLUNTEER**
- Most labor loss is due to time and labor
- Most projects are 1-day
- **Recommend:**
  - Short 1-day group tasks
  - Assign according to motives and current interests



# Discussion

- **DETERMINE IF CITIZEN SCIENCE IS APPROPRIATE FOR YOUR PROJECT**
- Need a volunteer coordinator separate from the project coordinator
  - Match motives
  - Survey interests
  - Deal with lack of motivation
- Understand that there will be drop outs



# Thank You!

- Dr. Dale Rollins
- Dr. Michael Morrison, Dr. Urs Kreuter, Dr. Dean Ransom, Dr. Markus Peterson
- Ben Taylor, Ken Cearley
- TQI Cooperators and Coordinators
- Quail Decline Initiative & Texas *Agri*LIFE Extension
- Texas A&M University



# Questions

