



WARD RESEARCH
I N C O R P O R A T E D

Tracking Awareness of and Attitudes toward Invasive Species in Hawaii

2017 Telephone Survey of Statewide Residents

Prepared for:

The Coordinating Group on Alien Pest Species (CGAPS)

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Table of Contents

Executive Summary	3
Objectives.....	8
Methodology	9
Profile of Respondents.....	10
Summary of Findings.....	11
 Appendix	

Executive Summary

This summary presents the highlights from a phone survey conducted August 16 to September 2, 2017. A total of n=406 surveys (17% via landline and 83% via cell) were completed, resulting in a maximum margin of error of +/-4.9% at a 95% confidence level.

- Environmental issues, particularly invasive species, are not top-of-mind among residents. Even when asked directly what are the most important environmental issues affecting the state, non-environmental issues such as homelessness (6%), rail (5%), and traffic (5%) came up more frequently than invasive species (2%).
 - Additionally, no singular issue emerged as the most important environmental issue among Hawaii residents, though trash/recycling (10%) and pollution/sewers (10%) were two of most frequently mentioned.
- Though the invasive species issue is not top-of-mind, a majority of residents are aware of the issue (72%) and upon explanation, said that it is a serious problem (83%) in Hawaii.
 - Both the proportion of residents who are aware and said that it is a serious problem has significantly increased from 2006 to 2017 (up 10 and 6 points, respectively).

Executive Summary

- Reported awareness of specific invasive species was highest for little fire ants (92%), rat lungworm (88%), and Zika (77%). Greater awareness of the latter two invasive species were likely driven by incidences of rat lungworm disease in Hawaii, and Zika virus in a variety of international locations.
- TV news/programs (62%) are the main source of information about invasive species, followed by Websites/Internet/Apps (35%), and newspapers (34%).
 - Information sources are shifting, as those under 35 years of age were less likely than their older counterparts to have reported getting information from newspapers.

Executive Summary

- Nearly nine in 10 (88%) residents said that climate change is a serious (“somewhat” + “very”) problem.
- Nine in 10 (94%) of those surveyed said it was important (“somewhat” + “very”) to control mosquitoes in Hawaii
 - Although knowledge of the “birth control” technique to control mosquitoes among residents is low (58% heard nothing at all), 2 in 5 (43%) surveyed said they were comfortable with the technique compared to 1 in 6 (16%) who were concerned.



Executive Summary

- Three in 4 (75%) residents reportedly would support an increase to the annual allocation of the State budget for prevention and control of invasive species.
- While overall attitudes were similar, there were some differences in the intensity of the attitudes and knowledge between Neighbor Island and Oahu residents. Specifically, Neighbor island residents were more likely than Oahu residents to:
 - have thought that invasive species is a very serious problem,
 - be aware of several invasive species and issues,
 - have said that climate change is a very serious problem, and
 - support an increase to the annual budget allocation.



Objectives and Methodology

Objectives

The overall objective of the survey is to:

TRACK LEVELS OF AWARENESS AND ATTITUDES TOWARD INVASIVE SPECIES AND GAUGE ATTITUDES TOWARD MOSQUITO STERILIZATION, IN ORDER TO FINE TUNE COORDINATING GROUP ON ALIEN PEST SPECIES (CGAPS) MESSAGING UPON IMPLEMENTATION.

Specifically, the survey sought to answer these questions:

- ✓ *What are the current levels of awareness of the invasive species issue?*
- ✓ *What is the level of concern about invasive species? About climate change?*
- ✓ *What is the level of knowledge about current invasive species? And where are residents learning about them?*
- ✓ *How comfortable are residents in supporting mosquito sterilization?*

Methodology

A phone survey averaging 11 minutes was conducted among Hawaii residents from August 16 to September 2, 2017, as part of a statewide omnibus survey. A total of n=406 surveys were completed (17% via landline and 83% via cell phone), resulting in a maximum margin of error of +/-4.9% at a 95% confidence level.

Island	# Interviews	Max. sampling error
Oahu	n=302	+/-5.6
Neighbor Island Total	n=104	+/-9.6
State Total	n=406	+/-4.9

All respondents were screened to ensure that they were at least 18 years of age. Quotas were also established for island and ethnicity based on census data to ensure a representative sample. Upon completion of the surveys, Ward Research edited, coded, data entered, and tabulated the results.

In order to most appropriately represent the total population, the final data file was weighted by age in order to match 2010 U.S. Census data for Hawaii.

Survey questions were developed by the Coordinating Group on Alien Pest Species (CGAPS) in conjunction with Ward Research. A similar set of questions was asked of a comparable sample of residents in August 2004 and June 2006. Where applicable, data was tracked to monitor changes over time.



Profile of Respondents

Years of Residency	2017	2006	2004
Less than 2 years	2%	2%	8%
2 to less than 5 years	5	4	9
5 to less than 10 years	7	5	6
10+ years	32	40	30
Born and raised	55	49	47
Age			
18 to 24 years	12%	12%	12%
25 to 34 years	17	18	19
35 to 44 years	16	20	21
45 to 54 years	18	22	22
55 to 64 years	16	11	12
65+ years	18	13	13
Refused	2	4	1
Mean	46.67	44.49	44.29
Gender			
Male	48%	50%	50%
Female	52	50	50

Income	2017	2006	2004
Under \$35,000	19%	23%	26%
\$35,000 to under \$50,000	15	14	25
\$50,000 to under \$75,000	17	14	15
\$75,000 to under \$100,000	14	41	23
\$100,000+	27		
Refused	9	26	12
Ethnicity			
Caucasian	22%	26%	32%
Chinese	4	5	4
Filipino	13	17	14
Hawaiian/part-Hawaiian	24	21	20
Japanese	21	19	19
Mixed	8	7	5
Other	6	5	6
Refused	2	1	1
Base:	(406)	(504)	(501)

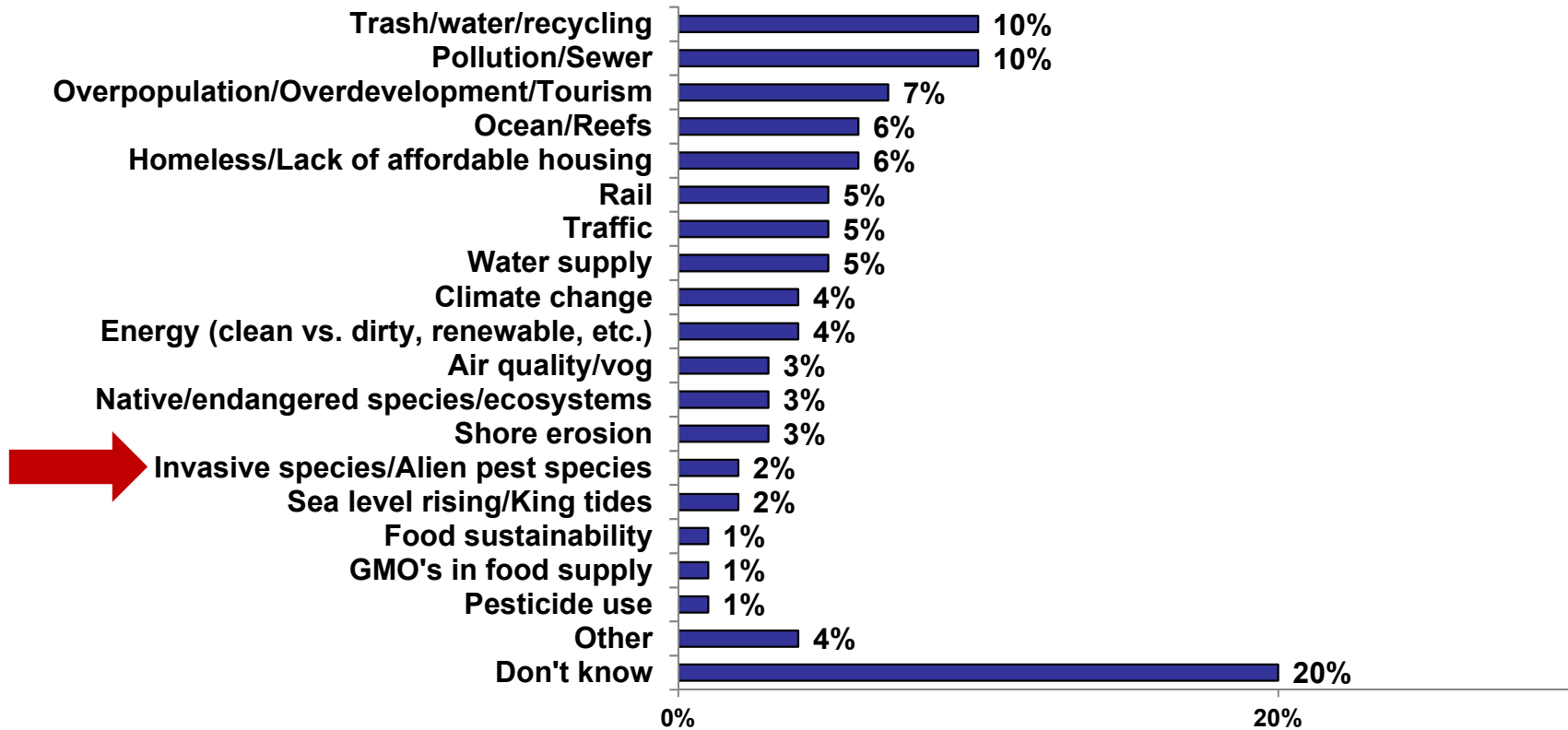


Importance and Awareness of Invasive Species

Most Important Environmental Issue

- No singular issue emerged as the most important environmental issue among Hawaii residents, though trash/recycling (10%) and pollution/sewers (10%) were the two most frequently mentioned.
- One in 5 (20%) residents did not have an answer which suggests the opportunity for education.

Most Important Environmental Issue in the State: 2017 Only



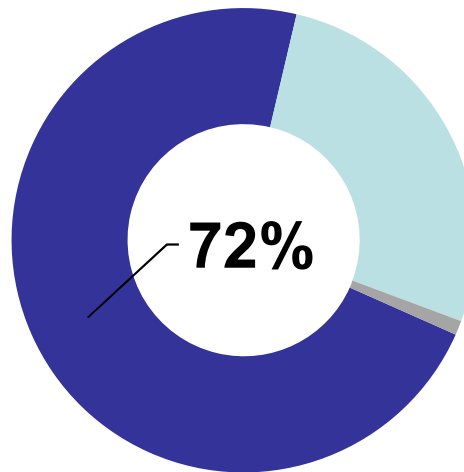
Q1: What do you feel is the most important environmental issue in the state?

(n=406)

Attitudes Toward Invasive Species

- While invasive species were not top-of-mind as the most important environmental issue, residents were reportedly aware of the issue. In fact, nearly 3 in 4 (72%) reportedly have heard of the term “alien pest species” or “invasive species.”
- There were no differences by area of residence.

Percentage of residents who have heard of alien pest or invasive species: 2017 Only



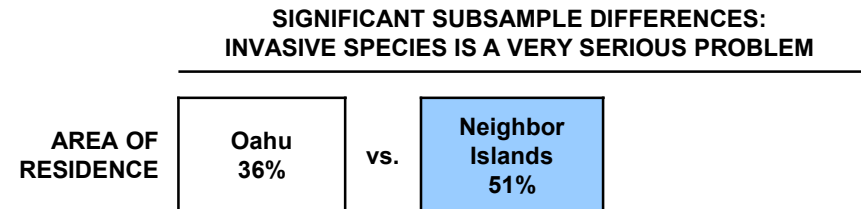
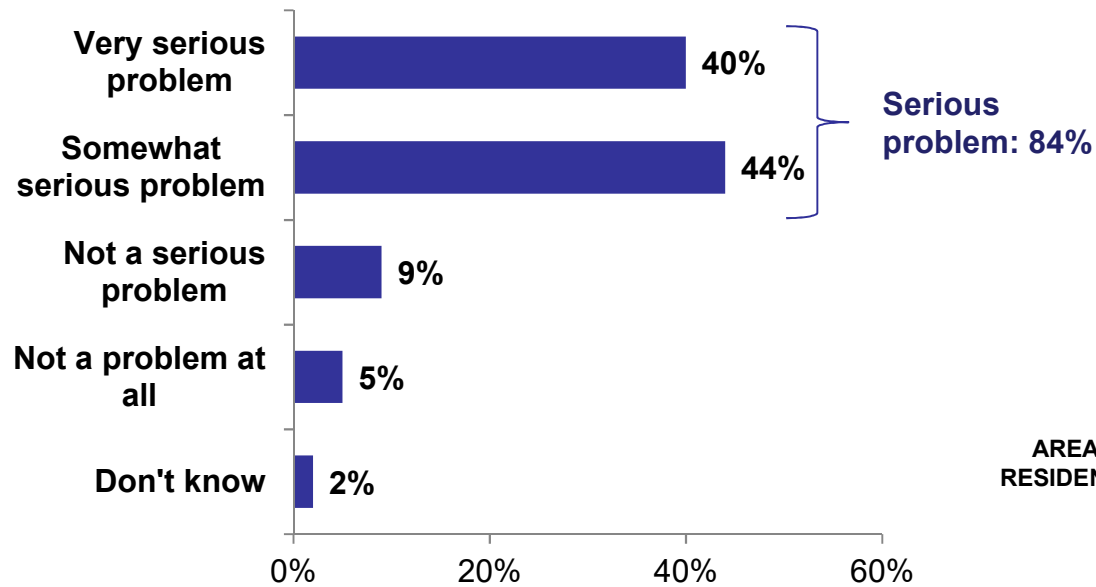
Q2: Have you seen, read, or heard about the concept known as “alien pest species” or “invasive species”?

(2017: n=406)

Attitudes Toward Invasive Species

- Additionally, over 4 in 5 (84%) residents said that invasive species is a serious (“somewhat” + “very”) problem in Hawaii when asked directly about them.
- Neighbor island residents were more likely than Oahu residents to have said that invasive species is a very serious problem.

Attitudes toward invasive species: 2017 Only



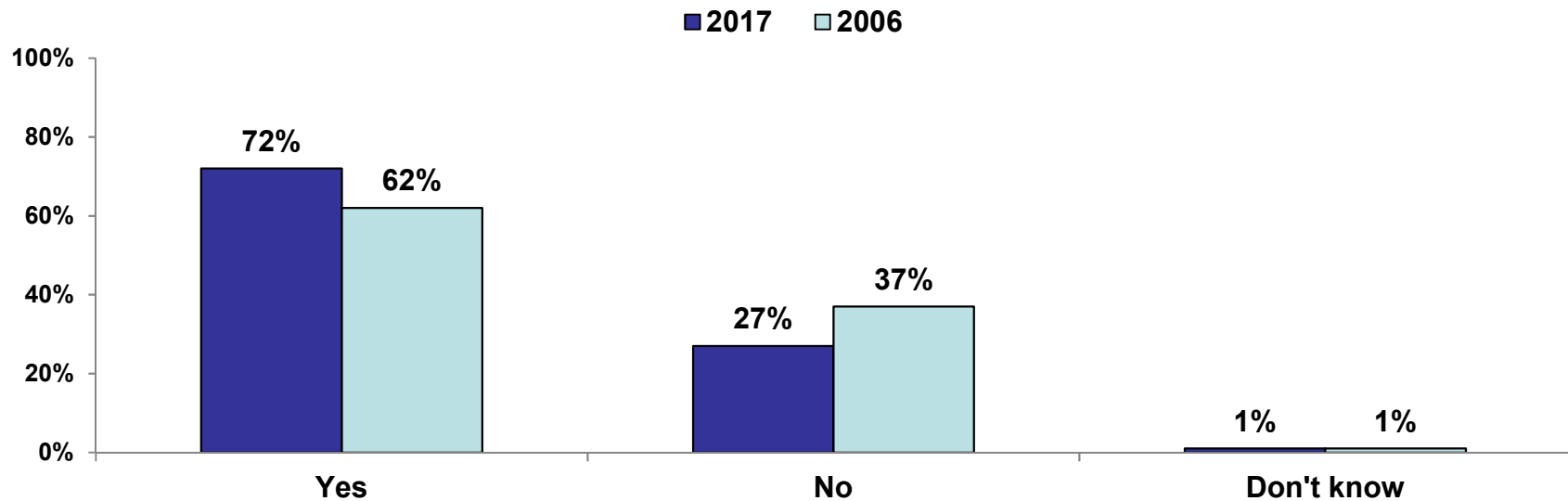
Q3: I'm going to read you a definition of "invasive species". Invasive species are harmful and undesirable plants, animals, insects, or even microbial organisms that arrived in Hawaii accidentally or on purpose. From what you may have seen, read, or heard, would you say that Hawaii's invasive species is a... (2017: n=406)



Awareness of “Alien Pest Species” or “Invasive Species”

- The proportion of residents aware of the terms “alien pest species” or “invasive species” has significantly increased from 2006 to 2017 (72% - up 10 points).

**Aware of “Alien Pest Species” or “Invasive Species”
--Tracking--**

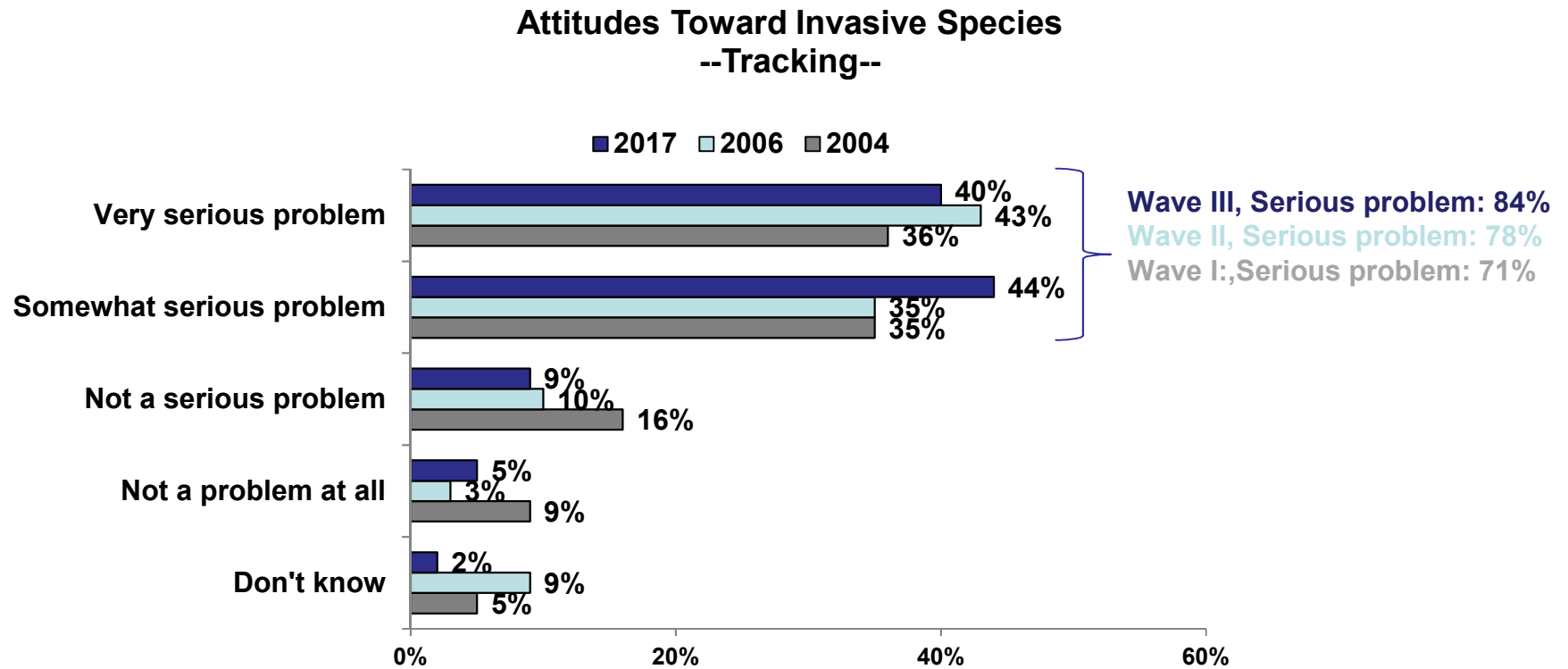


Q2: Have you seen, read, or heard about the concept known as “alien pest species” or “invasive species”?

(2017: n=406; 2006: n=504)

Attitudes Toward Invasive Species

- The proportion of residents who believe that invasive species is a serious (very + somewhat) problem in Hawaii has also significantly increased (84%, up 6 points from 2006).

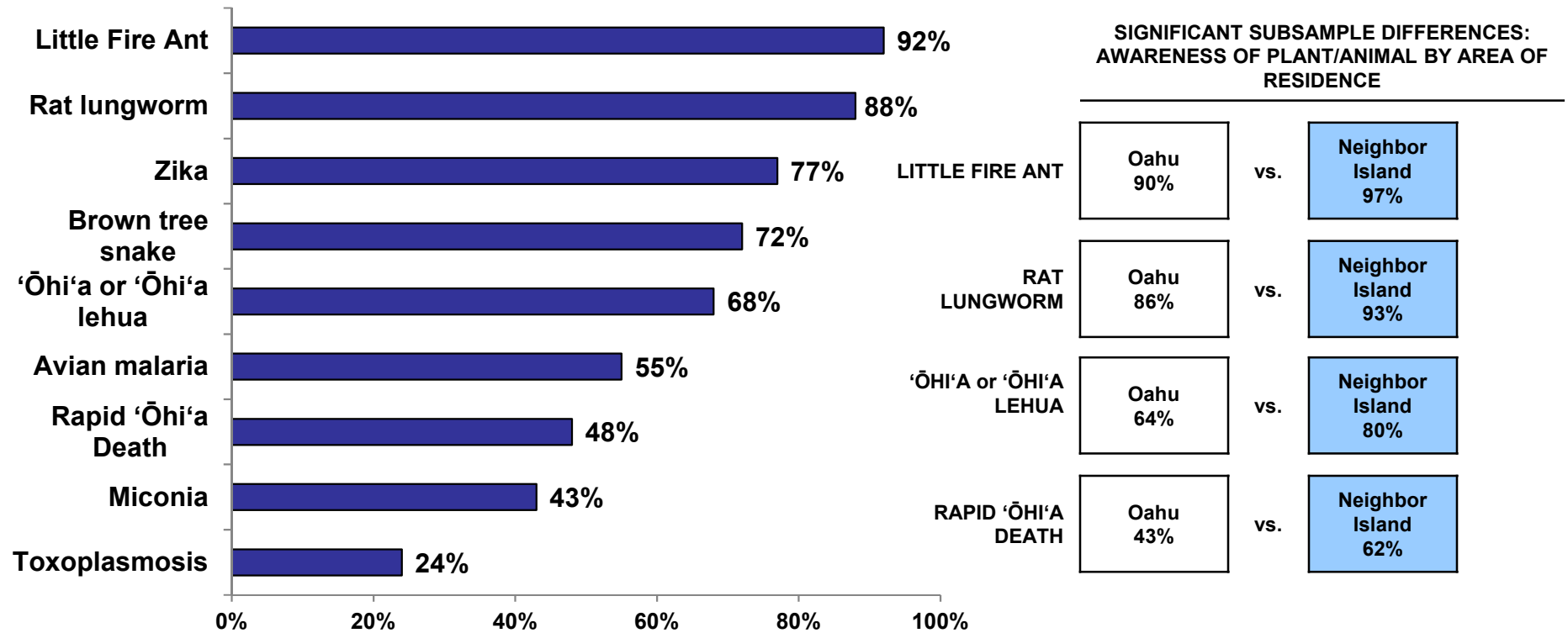


Q3: I'm going to read you a definition of "invasive species". Invasive species are harmful and undesirable plants, animals, insects, or even microbial organisms that arrived in Hawaii accidentally or on purpose. From what you may have seen, read, or heard, would you say that Hawaii's invasive species is a... (2017: n=406; 2006: n=504; 2004: n=501)

Awareness of Invasive Plants and Animals

- Awareness of rat lungworm (88%) and Zika (77%) was likely driven by recent incidents involving the two.
- Neighbor island residents were significantly more likely than Oahu residents to have heard of: little fire ant, rat lungworm, 'Ōhi'a, and rapid 'Ōhi'a death.

Awareness of Invasive Plants and Animals
% Yes

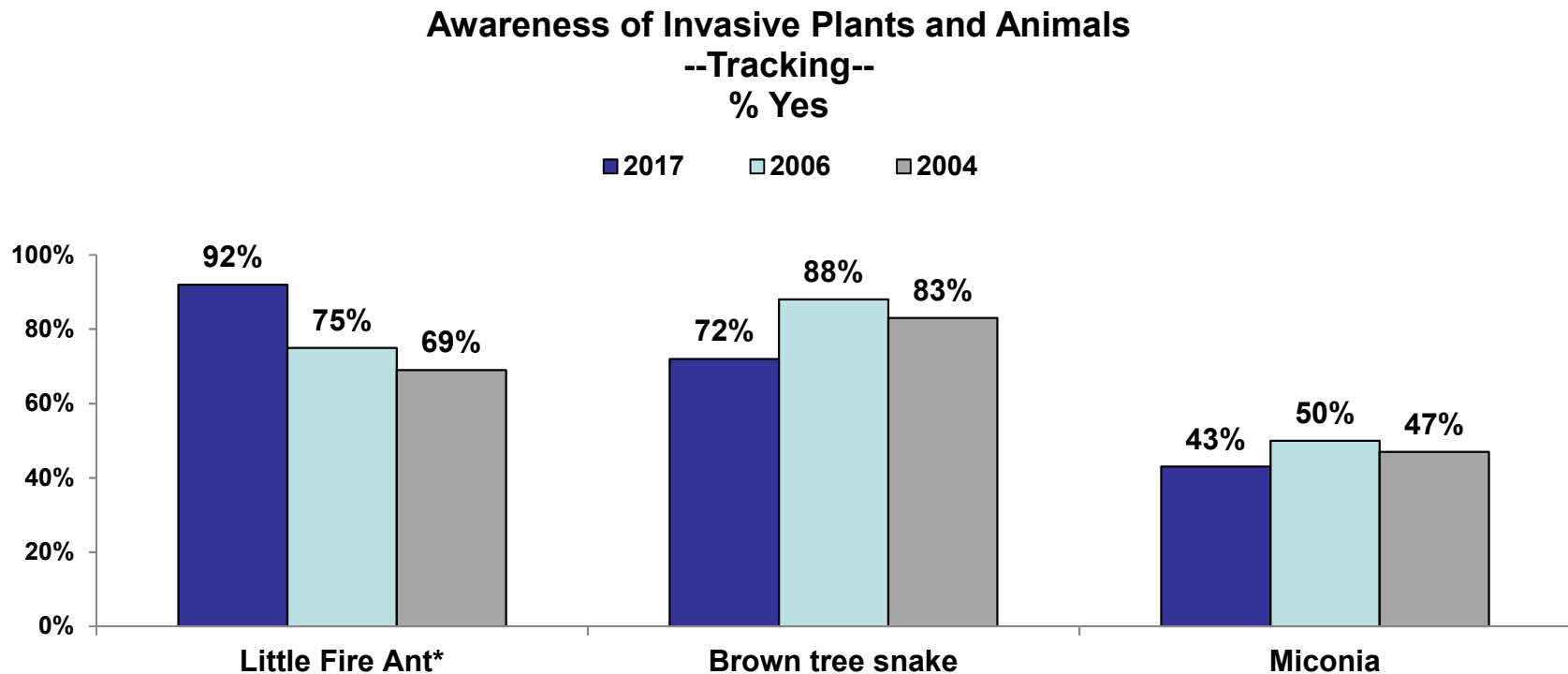


Q4: Please tell me whether or not you have heard of the following.

(2017: n=406)

Awareness of Invasive Plants and Animals

- Compared to 2006, the proportion of residents aware of the little fire ant has significantly increased (up 17 points to 92%). Conversely, the proportion of residents reportedly aware of the brown tree snake and miconia declined (down 16 points to 72% and down 7 points to 43%, respectively).



*Called "Red Fire Ants" in 2004 and 2006

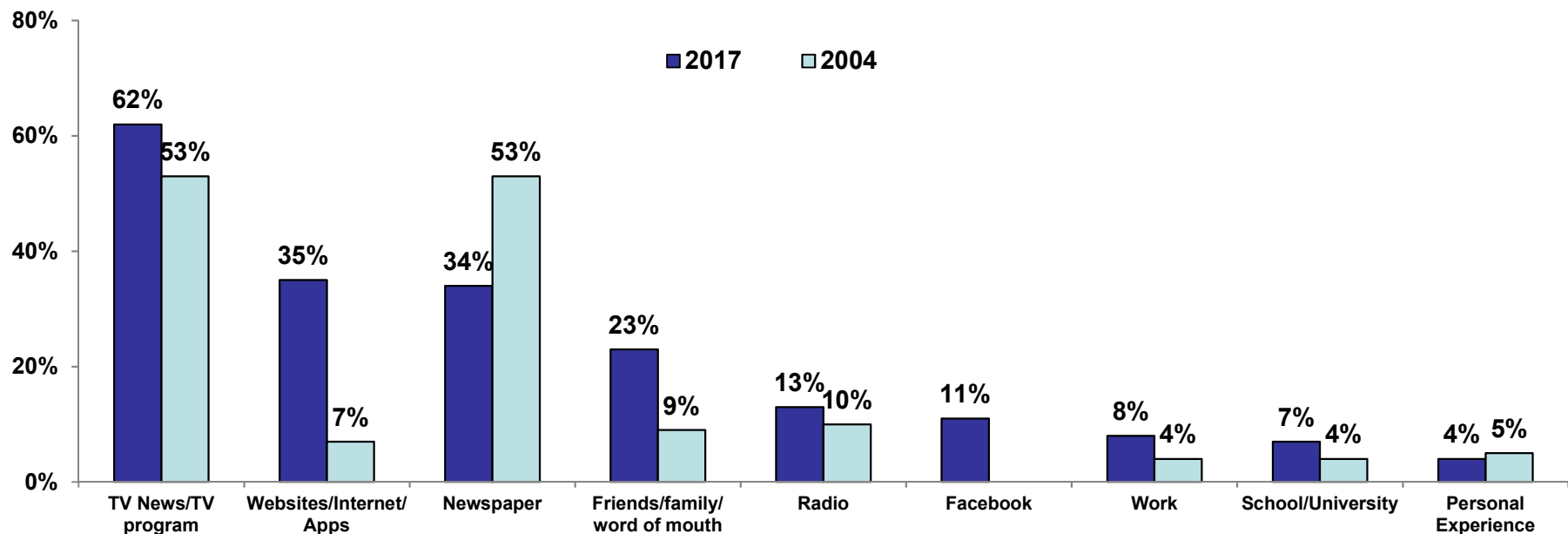
Q4: Please tell me whether or not you have heard of the following.

(2017: n=406; 2006: n=504; 2004: n=501)

Information Source: Invasive Species

- While TV news/programs is still the top source of information (up 11 points to 62%), other reported sources have shifted significantly from 2004 to 2017. Websites/Internet/Apps and word-of-mouth have increased (up 28 points to 35% and up 14 points to 23%, respectively) as reported sources of information while newspapers declined (down 19 points to 34%).

**Source of Information for Invasive Species
--Tracking--**



Q5: How do you hear about or get information on invasive species?.

(2017: n=406; 2004: n=501)

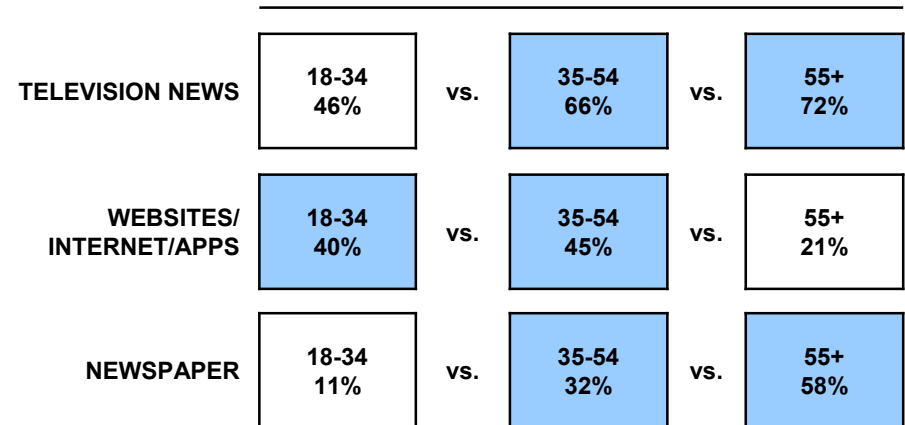


Information Source: Invasive Species - 2017

- The shift away from newspapers is largely driven by those under 55 as they adopt online sources for information about invasive species.

Top Sources in 2017*	First	Other	Total
TV News/TV Program	39%	23%	62%
Websites/Internet/Apps	16	19	35
Newspaper	14	21	34
Friends/family/word of mouth	8	15	23
Radio	4	9	13
Facebook	3	8	11
Work	4	4	8
School/University	5	2	7
Other printed materials such as brochures and flyers	1	4	5
Personal experience	1	3	4
Don't get any info	2	0	2
Refused	1	0	1

**SIGNIFICANT SUBSAMPLE DIFFERENCES:
INFORMATION SOURCES BY AGE**



Q5: How do you hear about or get information on invasive species?.

(2017: n=406)

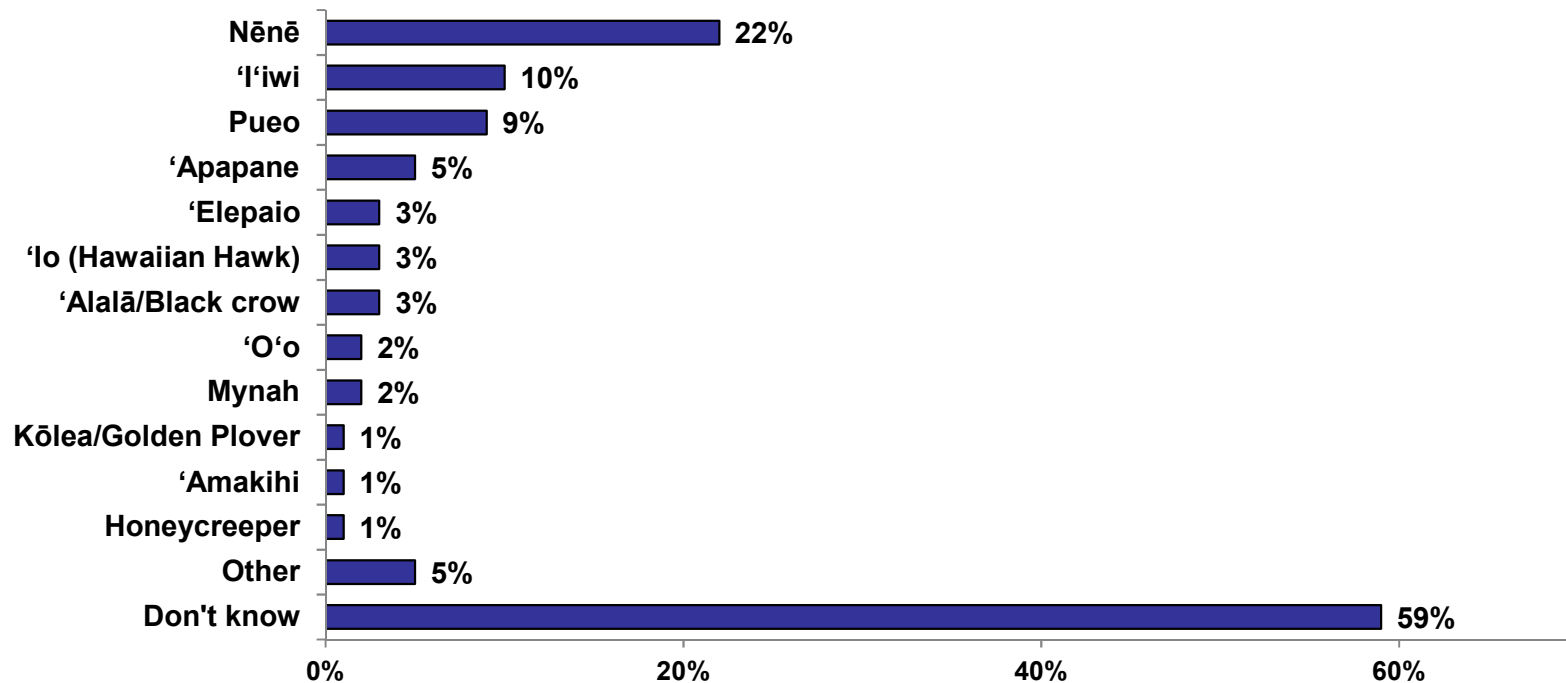
*Full list in appendix

Recall of Native Birds and Attitudes Toward Climate Change and Mosquito Control

Recall of Native Hawaiian Forest Birds

- Three in 5 (59%) residents were unable to recall any Native Hawaiian forest birds on an unaided basis. The nēnē was the most commonly recalled bird by 1 in 5 (22%) residents.
- Neighbor island residents (17%) were more likely than Oahu residents (7%) to recall the ‘I‘iwi. There were no other significant subsample differences in recall.

**Native Hawaiian Forest Birds
Total Mentions**



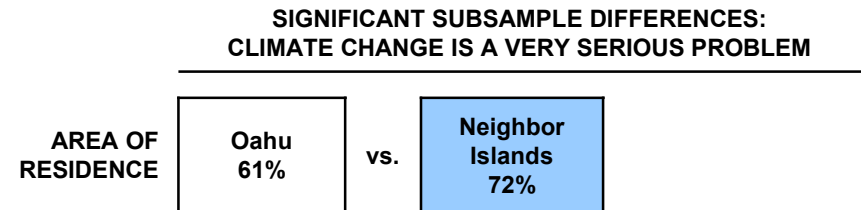
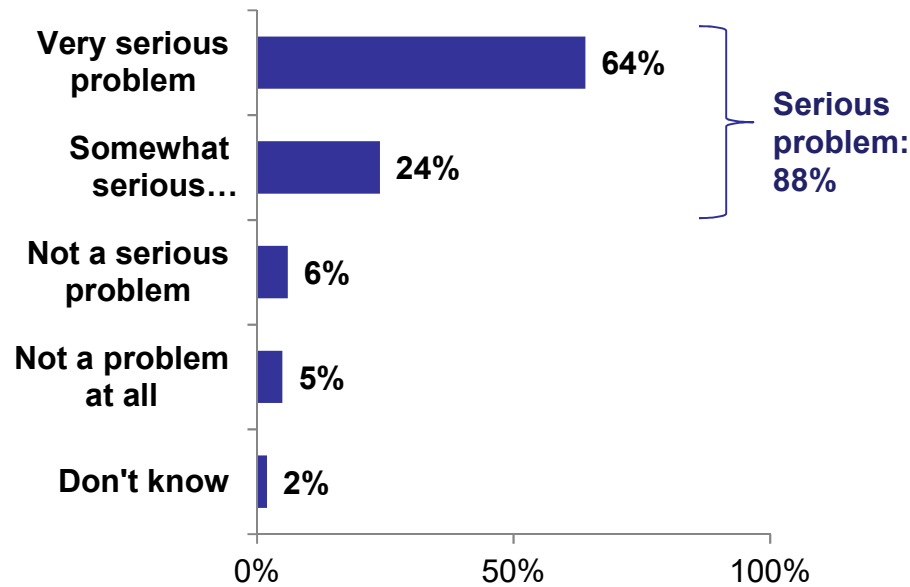
Q7: Can you name any native Hawaiian forest birds? Any others?

(2017: n=406)

Attitudes Toward Climate Change

- Altogether, 88% residents surveyed said that climate change is a serious problem; with two-thirds saying it is “very serious” (64%) and 1 in 4 saying it is “somewhat serious” (24%).
- Neighbor island residents were significantly more likely than Oahu residents to have said that climate change is a very serious problem.

Attitude toward climate change: 2017 Only

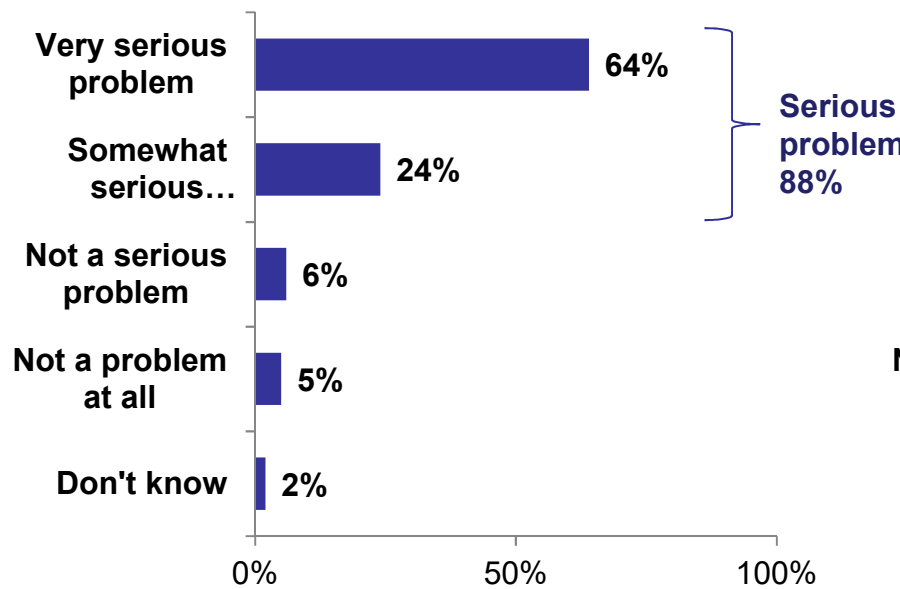


Q8: I'm going to read you a definition of "climate change". Climate change refers to the warming of the Earth's climate, resulting from human activities that change natural processes and trends. The impacts of climate change include melting glaciers, sea level rise, and changes to average temperatures and weather patterns. From what you may have seen, read, or heard, would you say that climate change is a...(2017: n=406)

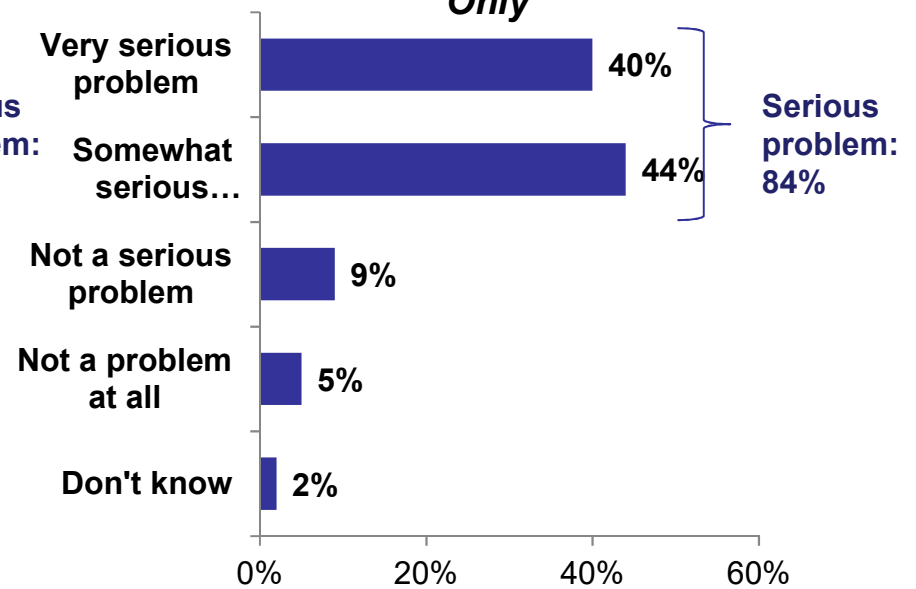
Attitudes Toward Climate Change

- While residents thought climate change and invasive species were serious (“somewhat” + “very”) problems (88% and 84%, respectively), there was a difference in the intensity of the attitudes, as more residents said that climate change is a “very serious” rather than “somewhat serious” problem.

Attitude toward climate change: 2017 Only



Attitude toward invasive species: 2017 Only

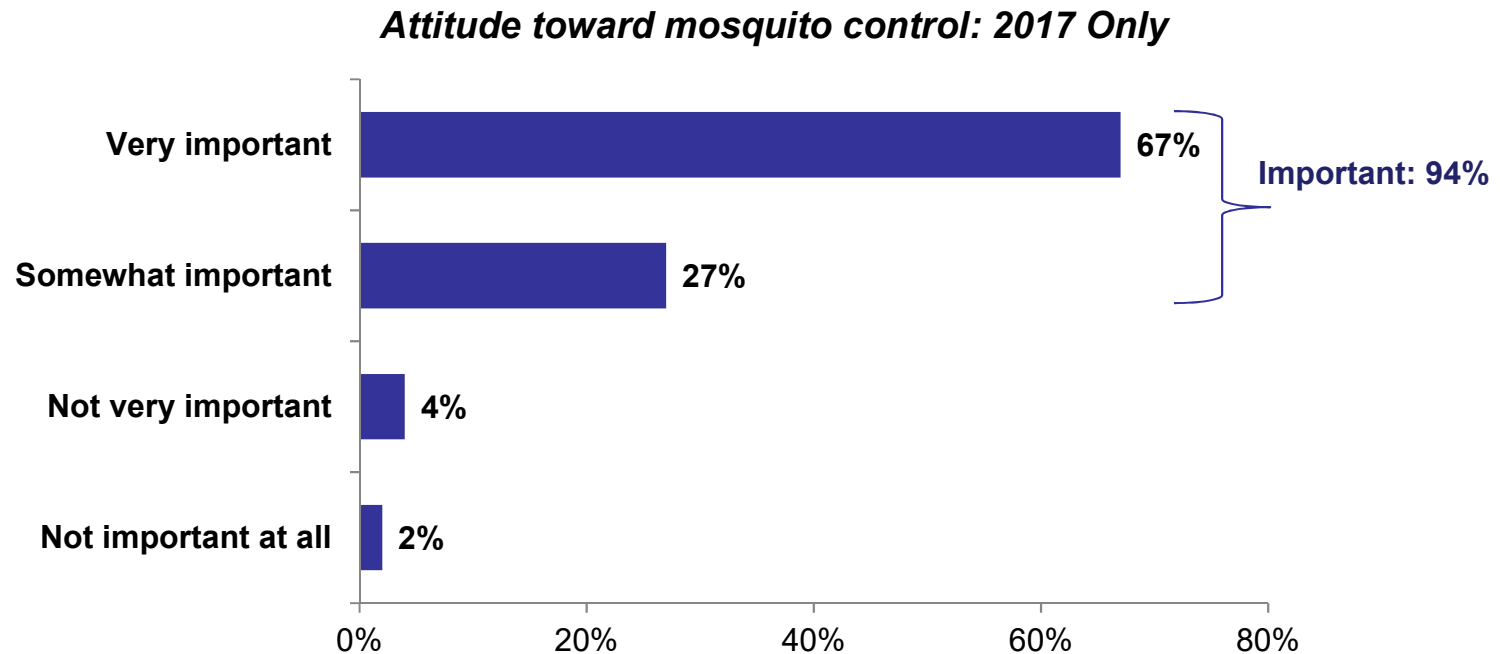


Q8: I'm going to read you a definition of "climate change". Climate change refers to the warming of the Earth's climate, resulting from human activities that change natural processes and trends. The impacts of climate change include melting glaciers, sea level rise, and changes to average temperatures and weather patterns. From what you may have seen, read, or heard, would you say that climate change is a...(2017: n=406)

Q3: I'm going to read you a definition of "invasive species". Invasive species are harmful and undesirable plants, animals, insects, or even microbial organisms that arrived in Hawaii accidentally or on purpose. From what you may have seen, read, or heard, would you say that Hawaii's invasive species is a... (2017: n=406)

Attitudes Toward Mosquito Control

- Nine in 10 (94%) residents surveyed thought it was important to control mosquitoes; with two-thirds saying it is “very important” (67%) and 1 in 4 saying it is “somewhat important” (27%).
- There were no significant differences by area of residence.

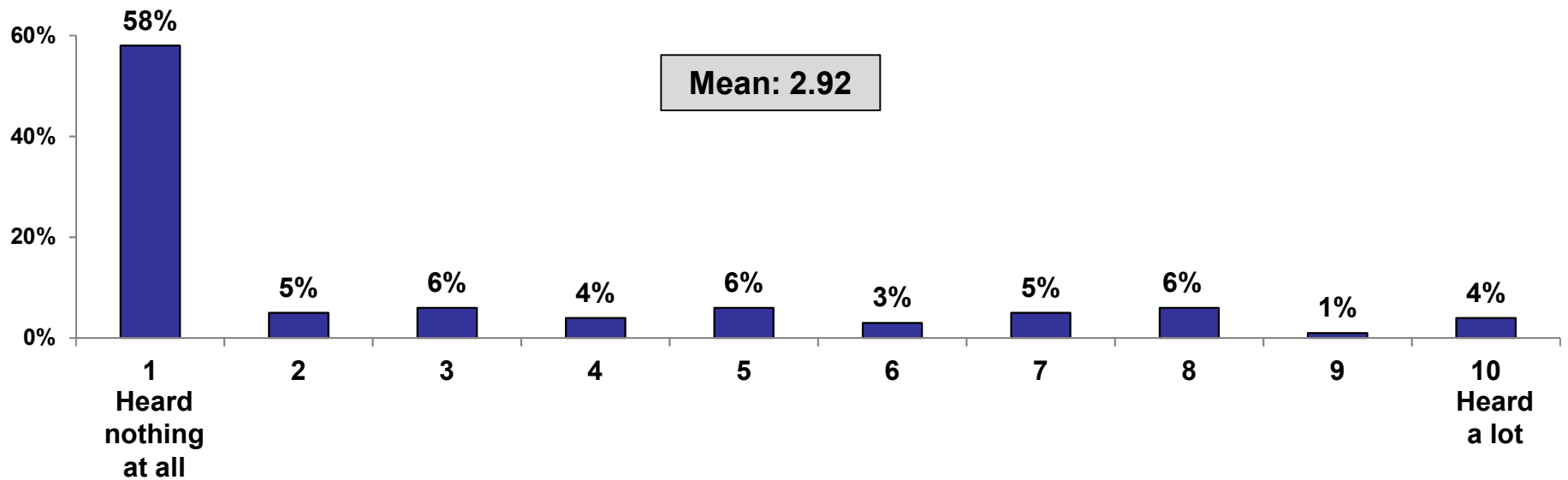


Q9: Hawaii has no native mosquitoes, the first mosquitoes arrived in ships in the early 1800’s. How important or unimportant is it to control mosquitoes in Hawaii? Would you say that controlling mosquitoes is... (2017: n=406)

Awareness of Mosquito “Birth Control” Technique

- Residents were not very familiar with the “birth control” technique used to reduce the mosquito population. In fact, three in 5 (58%) surveyed have heard nothing at all regarding the use of the “birth control” technique.

Level of Awareness of “Birth Control” Technique to Reduce Mosquitoes: 2017 Only

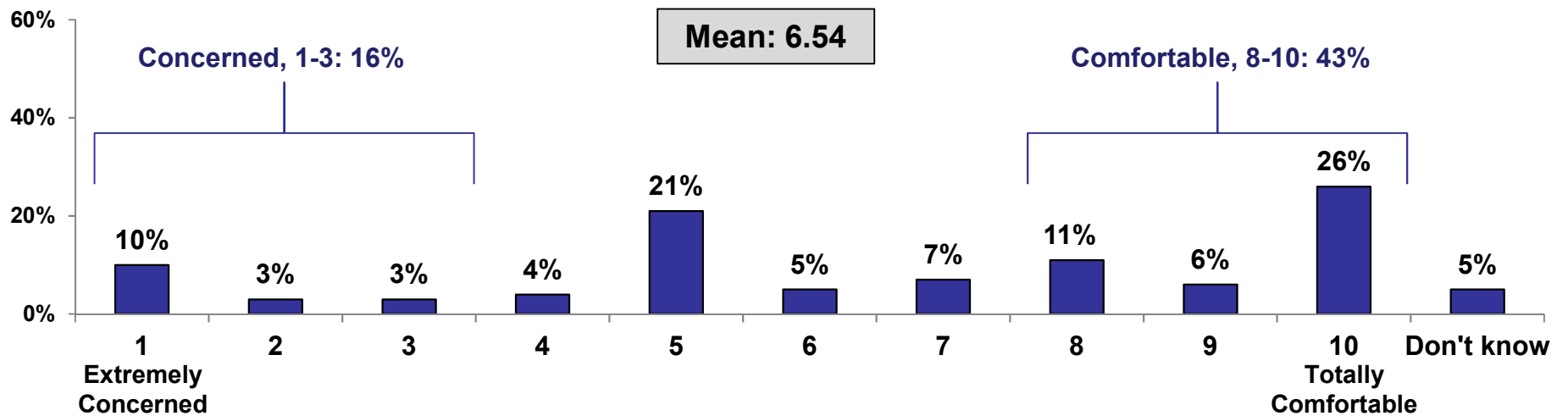


Q10: To reduce mosquito numbers and impacts, researchers propose using a “birth control” technique where captive-reared male mosquitoes are injected with a naturally-occurring bacteria, which acts as a birth control when they are released and mate with wild female mosquitoes, temporarily reducing mosquito numbers. Before today, how much had you read, heard or seen about this control technique, based on a 10-point scale where “1” means “you have heard nothing at all about this control technique” and “10” means “you have heard a lot about this control technique”. Of course, you can use any number in-between. (2017: n=406)

Concern Over Mosquito “Birth Control” Technique

- Residents were then asked to rate their level of concern with using the “birth control” technique on a 10-point scale, where 10 = totally comfortable and 1 = extremely concerned.
- In spite of the low levels of awareness, 2 in 5 (43%) residents surveyed said they were comfortable with the technique compared to 1 in 6 (16%) who were concerned.

Level of Concern Over “Birth Control” Technique to Reduce Mosquitoes



Q10a: And based on a 10-point scale where “1” means you are “extremely concerned about the use of this mosquito control technique” and “10” means you are “totally comfortable with the use of this mosquito control technique,” how would you rate your reaction to the idea of sterilizing and releasing male mosquitoes to reduce mosquito numbers and impacts? (2017: n=406)

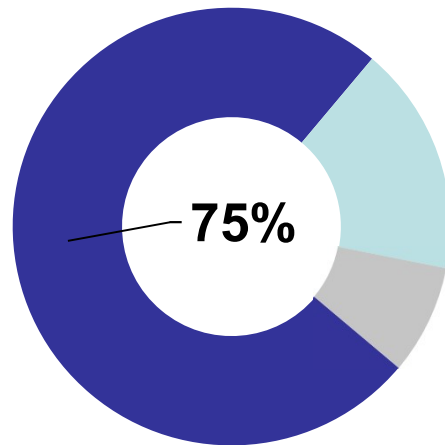


Support For Annual Allocation Increase

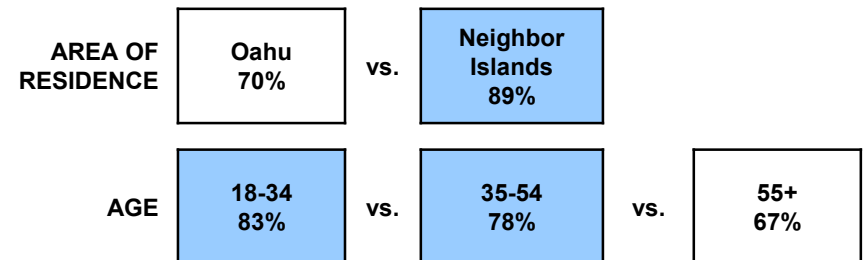
Support For Annual Allocation Increase

- Three in 4 (75%) residents support increasing the annual allocation from 1.5% to 3.0% of the State’s operation budget to help prevent and manage invasive species.
- Neighbor island residents and those under 55 years of age were significantly more likely than their counterparts to support an increase in the annual allocation.

Percentage of Residents Who Support Increasing Annual Allocation of State Budget: 2017 Only



SIGNIFICANT SUBSAMPLE DIFFERENCES: SUPPORT FOR ANNUAL ALLOCATION INCREASE



Q6: Currently, the lead State offices responsible for preventing or managing invasive species in Hawaii receive less than 1.5% (one and a half percent) of the annual State operating budget. Would you support increasing the annual allocation of the State budget for invasive species prevention and control work each year so that by 2027, this work receives 3% of the annual State operating budget? (2017: n=406)



Appendices



Information Source: Invasive Species - 2017

Source	First	Other	Total
TV News/TV Program	39%	23%	62%
Websites/Internet/Apps	16	19	35
Newspaper	14	21	34
Friends/family/word of mouth	8	15	23
Radio	4	9	13
Facebook	3	8	11
Work	4	4	8
School/University	5	2	7
Other printed materials such as brochures and flyers	1	4	5
Personal experience	1	3	4

Source	First	Other	Total
Magazine articles	1	2	3
Direct from misc. govt. agencies	1	2	3
Instagram	1	1	2
Misc. clubs or civic organizations	1	1	2
At airport/Travel	1	1	2
Email	<1	<1	1?
Community or neighborhood board meetings	<1	<1	1?
Twitter	0	<1	<1
Other	1	2	3
Don't get any info	2	0	2
Refused	1	0	1

Q5: How do you hear about or get information on invasive species?.

(2017: n=406)