



**INVASIVE SPECIES
RESIDENT PERCEPTIONS
IN HAWAII**

**Prepared for:
Coordinating Group on Alien Pest Species
(CGAPS)**

August 2012



BACKGROUND & METHODOLOGY

The Coordinating Group on Alien Pest Species (CGAPS) has contracted QMark Research to conduct a quantitative study in the form of a telephone interview among 500 Hawaii residents. The sample was derived from a listing generated by QMark's proprietary Random Digit Dialing software. A total of 355 interviews were conducted on Oahu with 65 being completed among residents of the Big Island, 50 on Maui and 30 on Kauai. The fieldwork began on August 13, 2012 and was completed on August 24, 2012.

Sixty-two percent of the sample was completed among wireless phone users while 38% were conducted among landline phones.

The margin of error for a sample of this size (n=500) is +/- 4.38 percentage points with a 95% confidence level.



SECTION 1 - “ALIEN PEST SPECIES” / “INVASIVE SPECIES”

Aided Awareness

At the outset of the study each respondent was asked if they had heard or read about either of these two terms.

| | 2006 | 2007 | 2012 |
|-----------------|------|------|------|
| Aided awareness | 62% | 70% | 84% |
| No awareness | 37% | 29% | 15% |
| DK/ Ref | 1% | 1% | 1% |

Eighty-four percent of the Hawaii residents polled indicate they had heard of “Alien Pest Species” and/or “Invasive Species” prior to taking part in the study.

When these results are tracked we note that aided name awareness has increased considerably over the last five years rising 14-points from 70% in 2007.

- Aided name awareness of either of these two terms increases as respondents become more affluent. 92% of those residing in households with combined incomes of \$100K/+ have heard of these terms. As a point of comparison, aided awareness drops to 79% among those residing in households earning below \$50K/year.

Impact – Home Gardens

Next, research respondents were presented with the following scenario and asked for their own personal opinion on the situation.

“Some types of plants could spread from yards and gardens into forests and natural areas and harm the environment”

They were then asked how strongly they agreed or disagreed with this statement. They were instructed to quantify their perceptions using a standard four-point rating scale highlighted in the following table. The percent results as well as the mean or average score are given. The higher the mean rating the more strongly they agree with the statement.

| | 2004 | 2006 | 2007 | 2012 |
|-----------------------|------------|------------|------------|------------|
| Strongly agree (4) | 39% | 43% | 47% | 58% |
| Somewhat agree (3) | 42% | 40% | 33% | 26% |
| NET AGREE | 81% | 83% | 80% | 84% |
| Somewhat disagree (2) | 11% | 7% | 10% | 5% |
| Strongly disagree (1) | 5% | 4% | 4% | 4% |
| NET DISAGREE | 16% | 11% | 14% | 9% |
| Don't know | 3% | 5% | 6% | 7% |
| MEAN | na | na | 3.3 | 3.47 |

More than half (58%) the residents polled strongly agree with this statement. Another 26% somewhat agree with it resulting in 84% of those polled agreeing with this statement to a certain degree. At the opposite end, roughly one in ten (9%) disagrees with the statement. When these scores are looked at in the aggregate they result in a mean or average score of 3.47 out of a possible 4.00.

When community perceptions are tracked we find the proportion that strongly agrees about the potential impact and harm plants from local gardens can have on the environment continuing to grow. In 2004, 39% strongly agreed with this information, by comparison, this number has increased to 58% in the current study.

Invasive Species – Degree of Concern

In this section of the research respondents were presented with the following definition:

“Invasive species are harmful and undesirable plants, animals, insects or even microbial organisms that arrived in Hawaii accidentally or on purpose”

Respondents were then asked how serious an issue it is for them personally, if at all. They were instructed to quantify their perceptions using a standard four-point rating scale highlighted in the table below. The percent results as well as the mean or average score are showcased. The higher the mean score the greater the perceived problem.

| *Change in wording | 2004 | 2006 | 2007 | 2012* |
|---------------------------|------------|------------|------------|------------|
| Very serious problem (4) | 36% | 43% | 46% | 45% |
| Somewhat serious (3) | 35% | 35% | 32% | 44% |
| NET PROBLEM | 71% | 78% | 78% | 89% |
| Not very serious (2) | 16% | 10% | 8% | 5% |
| Not a problem at all (1) | 9% | 3% | 5% | 3% |
| NET NOT AN ISSUE | 25% | 13% | 13% | 8% |
| Don't know | 5% | 9% | 9% | 3% |
| MEAN | na | na | 3.3 | 3.35 |



Forty-five percent of those polled believe invasive species are a very serious problem. Another 44% give it a somewhat serious rating. Combining these two scores we have 89% who agree that invasive species pose a serious concern in Hawaii. Less than one in ten (8%) believe this is not much of a problem facing the state. When these scores are looked at in the aggregate they result in a mean score of 3.35 out of a possible 4.00.

When the results are tracked we find more residents who view invasive species as a problem locally. Though the top box score (very serious) has remained basically unchanged, there has been an increase of 12-percentage points among those who view this as a somewhat serious problem.

- Neighbor Island (65% very serious problem) respondents view this as a greater threat than their Oahu (37% very serious problem) counterparts.
- Among the major ethnic groups, Hawaiians appear to be the most sensitive to this issue. Fifty-nine percent of Hawaiians polled view this as a very serious problem. By comparison this number (very serious) drops to 36% among Japanese and 44% among Caucasians.
- Perception with regards to the seriousness of this issue grows stronger as respondents get older. For example, among adults under the age of 35, 32% view invasive species as a very serious problem. By comparison, this number increases to 51% among adults 65 and older.

Aided Awareness- Specific Species

In this section of the report respondents were read the names of eight plant and animal species. They were then asked if they had prior name awareness of each.

| *added in current study | 2004 | 2006 | 2007 | 2012 |
|--------------------------------|------|------|------|------|
| Coqui Frog | 69% | 82% | 86% | 89% |
| Little Fire Ant | NA | NA | NA | 85% |
| Brown Tree Snake | 83% | 88% | 84% | 81% |
| Invasive seaweed/ Alien Algae* | 46% | 55% | 49% | 64% |
| Miconia | 47% | 50% | 58% | 47% |
| Wiliwili Gall Wasp | NA | NA | NA | 35% |
| Gorilla Ogo | NA | NA | NA | 19% |
| Citrus Greening | NA | NA | NA | 9% |

The results indicate the three invasive species with the highest aided name awareness were the Coqui Frog, Little Fire Ant, and the Brown Tree Snake. Invasive seaweed/



alien algae were the only other species that had higher than 50% aided name awareness.

When the results are tracked we find aided name awareness for the Coqui Frog and Brown Tree Snake have remained relatively flat since 2007. The two biggest changes appear to be a drop in awareness of Miconia and an increase in awareness of invasive seaweed (note: Alien Algae added to description in current study).

- Awareness of the Coqui Frog, Little Fire Ant, Miconia, and Wiliwili Gall Wasp are higher on the Neighbor Islands than they are on Oahu.
- Generally speaking, male respondents tend to have higher name awareness of these invasive species than their female counterparts.

Preventing Inter-Island Movement of Invasive Species

Research respondents were told that some invasive species such as Coqui frogs and little fire ants can move from one island to another on plants, vehicles, equipment, or on personal goods. Respondents were then asked how important it is to them to prevent this type of movement. They were instructed to quantify their perceptions using a standard four-point rating scale highlighted in the table below. In addition to the percent results a mean or average score is also provided. The higher the mean score the greater the perceived importance.

| | 2012 |
|--------------------------|-------------|
| Very Important (4) | 77% |
| Somewhat Important (3) | 17% |
| NET IMPORTANT | 94% |
| Not too important (2) | 3% |
| Not important at all (1) | 2% |
| NET UNIMPORTANT | 5% |
| Don't know | 1% |
| | |
| MEAN | 3.71 |

The vast majority of those polled say it is important to prevent the inter-island movement of the types of species discussed in this section of the study. Seventy-seven percent feel this is very important to them while another 17% consider it to be somewhat important. Of the remainder, just 5% view this as a relative non-issue. When these scores are combined and looked at in the aggregate they result in a mean or average score of 3.71 out of a possible 4.00.



- Neighbor Island (86% very important) residents are more sensitive to this issue than are those on Oahu (74% very important).
- Younger residents are not as concerned about this issue when compared to older segments of the sample. For example, among adults under the age of 35, 59% view this as a very important issue. By comparison, this number (very important) jumps to at least 84% among those 50 years of age and older.



SECTION 2 – BIOCONTROL

Unaided Awareness

When respondents are asked if they are familiar with the concept of using a plant's or insect's natural enemies to control invasive species, 71% say they are.

| | 2012 |
|-----------------|-------------|
| Aided awareness | 71% |
| No awareness | 28% |
| DK/ Ref | 1% |

- Males (75%) are more likely to be familiar with it than females (67%).
- Caucasians (83%) were the most likely to have been exposed to this definition prior to taking part in the study than other ethnic groups.

Aided Name Awareness

To probe further, respondents were asked if they had ever heard of the term “biological control” or “biocontrol.”

| | 2012 |
|-----------------|-------------|
| Aided awareness | 63% |
| No awareness | 36% |
| DK/ Ref | 1% |

The results show that a little over 3 in 5 (63%) of those polled had heard of these specific terms prior to taking part in the study.

- Aided awareness is higher on the Neighbor Islands (70%) than it is on Oahu (59%).
- Among the major ethnic segments, once again, Caucasians (72%) are the most likely to have heard of these terms prior to taking part in the study. As a point of comparison, aided awareness among Japanese is only 54%.



Next, those respondents who were familiar with the concept or the specific terms were asked if they could name any successful biocontrol or natural enemy projects that have been conducted in Hawaii. The top responses are highlighted in the table below.

| | n=404 |
|-------------|-------|
| Don't know | 78% |
| Mongoose | 9% |
| Wasp | 5% |
| Mites | 1% |
| Fruit flies | 1% |
| Lady Bug | 1% |
| White flies | 1% |
| Beetle | 1% |
| Cactus | 1% |

The research shows that although these residents may be familiar with the concept or specific terms, most could not name a single successful project where the technique has been used locally. Among the ones that were named most, they include: the introduction of the mongoose and wasps.

Positions on Biocontrols Use

Each respondent was presented with the following scenario:

If a damaging invasive species became too widespread to control by manual labor or pesticides, resource managers may look for a natural enemy (also known as a biocontrol) that could help keep the invasive plant or insect under control.

Before being released in Hawaii, a proposed biocontrol species is tested in quarantine to ensure that it will not impact other species or our environment.

They were then asked how strongly they would support or oppose the use of biocontrols as a tool to help control a widespread invasive species. They were instructed to quantify their perceptions using a standard four-point rating scale highlighted in the table below. The percent results as well as the mean or average score are highlighted. The higher the mean score the more strongly they support biocontrol.

| | 2012 |
|----------------------|-------------|
| Strongly support (4) | 32% |
| Somewhat support (3) | 46% |
| NET SUPPORT | 78% |
| Somewhat oppose (2) | 9% |
| Strongly oppose (1) | 7% |
| NET OPPOSE | 16% |
| Don't know | 5% |
| MEAN | 3.10 |



The results indicate three in four Hawaii residents would support the use of this technique given the safeguards highlighted in the description above. Thirty-two percent would strongly support such initiatives while another 46% would somewhat support them. At the opposite end, 16% have reservations regarding its use. Five percent are unsure given the information that was provided to them. When these scores are then looked at in the aggregate they result in a mean or average score of 3.10 out of a possible 4.00.

- On average, Hawaiians are less likely to support these types of techniques than are other ethnic groups. Twenty-one percent of the Hawaiians polled oppose the use of biocontrols to a certain degree.

Positions on Biocontrol Funding

At the conclusion of this section of the study respondents were asked their opinion regarding an increase in funding for biocontrol research and quarantine testing in Hawaii. Again, they were asked to quantify their perceptions using the same standard four-point rating scale highlighted in the prior section. The percent results as well as the mean or average score are provided. The higher the mean score the stronger the support for increased funding in this area.

| | 2012 |
|----------------------|-------------|
| Strongly support (4) | 35% |
| Somewhat support (3) | 41% |
| NET SUPPORT | 76% |
| Somewhat oppose (2) | 9% |
| Strongly oppose (1) | 10% |
| NET OPPOSE | 19% |
| Don't know | 5% |
| | |
| MEAN | 3.07 |

A majority of Hawaii residents support an increase in funding for the types of biocontrol programs highlighted in this section of the study. Over a third (35%) strongly support an increase in funding while another 41% somewhat support it. At the opposite end, one in five (19%) would oppose any funding increases in this area. When these scores are looked at in the aggregate they result in a mean or average score of 3.07 out of a possible 4.00.

- Support for funding increases is slightly higher on the Neighbor Islands. Forty-two percent of N.I. residents polled strongly support increases in funding in this area. By comparison this number (strongly support) falls to 32% on Oahu.



- Support for funding increases for biocontrol declines as respondents become more affluent. For example, 43% of those residing in households with combined incomes below \$50K/year would strongly support an increase in funding. This number (strongly support) drops to 32% among those in households with combined incomes in excess of \$100K/year.



SECTION 3 – CALL-TO-ACTION

At the outset of this section of the study respondents were given the following scenario:

If you saw a snake, what phone number would you call to report it?

The table below highlights the top responses from Hawaii residents.

| | 2012 |
|---|-------------|
| 911 | 36% |
| Police-911 | 13% |
| Humane Society | 13% |
| Hawaii State Department of Agriculture | 12% |
| Don't know | 8% |
| Hawaii State Department of Land & Natural Resources | 6% |
| Animal Quarantine | 6% |
| Phone book | 5% |
| 586-PEST | 1% |
| 643-PEST | 1% |

The top response among research respondents is to call 911 and/or the police department. Thirteen percent would try and contact the local Humane Society while 12% would call the Hawaii State Department of Agriculture. Six percent would turn to the Department of Land & Natural Resources or Animal Quarantine.

Very few (1% each) specifically cite 586-PEST or 643-PEST as the number they would call.

Specific Examples

In this next section respondents were asked to rate how likely they would be to report the following possible invasive species to the proper authorities.

| | Very Likely | Somewhat Likely | NET LIKELY | Not Likely |
|---|--------------------|------------------------|-------------------|-------------------|
| An unusual stinging ant | 36% | 22% | 58% | 41% |
| Sick-looking or yellowing coconut trees | 11% | 15% | 26% | 72% |

The research indicates that there is at least some likelihood among a little more than half (58%) the respondents polled that they would report “an unusual stinging ant.” By comparison, just 26% would report seeing sick-looking or yellowing coconut trees.



- As far as stinging ants are concerned, older respondents appear more likely to report this species than are younger respondents. For example, at least half of those polled under the age of 50 indicate they would not report an unusual stinging ant. By comparison this number (would not report) declines to fewer than 35% among those over 50 years of age.

Next, those respondents who indicated they were at least somewhat likely to report the above invasive species were asked if they would most likely use the following methods.

| | Base | Phone | Website | Email | Smartphone app |
|--|-------------|--------------|----------------|--------------|-----------------------|
| Unusual Stinging Ant | 288 | 85% | 17% | 7% | 9% |
| | | | | | |
| Sick-looking/ Yellowing Coconut Trees | 130 | 85% | 18% | 12% | 9% |

The research shows that using the phone would be by far the most likely means of reporting these invasive species. Just less than 1 in 5 would go on a website and about 1 in 10 would use email or a Smartphone app.



SECTION 4 – SOURCES OF INFORMATION/ EDUCATION

Ornamental Plants

In this section of the study respondents were presented with the following information:

Some ornamental plants that are currently available in stores or over the internet could become invasive if planted in Hawaii. Residents can protect Hawaii by learning about and choosing non-invasive plants.

They were then asked to rate their likelihood of using the informational sources listed below to learn more about invasive and non-invasive plants.

| | Very Likely | Somewhat Likely | NET LIKELY | Not Likely |
|--|-------------|-----------------|------------|------------|
| Read printed information (such as brochures, flyers, etc.) | 46% | 35% | 81% | 18% |
| Go to a website | 52% | 24% | 76% | 23% |
| Watch online video clips | 26% | 34% | 60% | 39% |
| Call an invasive plant hotline | 21% | 28% | 49% | 50% |
| Email an invasive plant hotline | 18% | 28% | 46% | 54% |
| Use a Smartphone app | 23% | 20% | 43% | 56% |
| Join an online forum with invasive plant experts | 12% | 23% | 35% | 65% |

The results indicate the top three sources participants would use to educate themselves on this subject are reading printed information (such as brochures, flyers, etc.), visiting a website, and watching online video clips.

The use of websites, Smartphone apps and watching online videos are more popular among the younger segments. Conversely, the use of printed materials as a source of information is not as popular among young people.

- 41% of adults under 35 indicate they are very likely to use a Smartphone app to learn more about this subject. As a point of comparison, just 6% of adults over 65 feel the same (very likely).
- At least 50% of those over the age of 50 indicate they are very likely to consult printed materials to learn more about this subject. As a point of comparison, just 25% of those under 35 feel the same (very likely to consult printed materials).
- Websites appear to have the greatest reach across all ages. 41% of adults 65 and older indicate they would be very likely to use a website to learn more about this subject. This number (very likely) only increases as respondents get younger.



Educating School-Aged Children

Research respondents were asked to rate the overall importance of requiring environmental education curriculum for students in grades K thru 12. They were instructed to quantify their perceptions using a standard four-point rating scale highlighted in the table below. In addition to the percent results a mean or average score is also provided. The higher the mean score the greater the perceived importance.

| | 2012 |
|--------------------------|------------|
| Very Important (4) | 66% |
| Somewhat Important (3) | 27% |
| NET IMPORTANT | 93% |
| Not too important (2) | 4% |
| Not important at all (1) | 3% |
| NET UNIMPORTANT | 7% |
| Don't know | 0% |
| MEAN | 3.58 |

Nearly all of the local residents polled believe it is important to require environmental education curriculum for students in grades K thru 12. Two-thirds (66%) believe it is very important, while another 27% consider it to be somewhat important. Just 7% believe that requiring this curriculum is not important. When these results are looked at in the aggregate they result in a mean or average importance score of 3.58 out of a possible 4.00.

- Females (71% very important) place a higher degree of importance on this than their male (62% very important) counterparts.



PROFILE OF RESPONDENTS

| | OVERALL | COMMENTS |
|--|-----------------------------------|---|
| INTERNET ACCESS | 85% | Majority have access to the Internet |
| REGISTERED VOTER | 73% | Three in four registered voters |
| AGE 18-34 35-49 50-64 65+ MEAN | 21% 20% 34% 24% 51.48 | Average age of respondent is 51.48 years of age. |
| PRIMARY RESIDENCE Own Rent | 66% 34% | A little more than half own their primary residence |
| HOUSEHOLD SIZE 1-2 3+ MEAN | 46% 54% 3.22 | Typical household size is 3.22 individuals |
| CHILD UNDER 18 | 33% | A third live with a child under 18 |
| YEARS IN HAWAII Lived elsewhere Lifetime resident | 49% 50% | Nearly half have lived outside the State |
| ETHNICITY Caucasian Japanese Hawaiian Filipino Other | 27% 22% 20% 11% 17% | |
| HOUSEHOLD INCOME < \$50K \$50K-\$100K \$100K+ Refused | 23% 34% 24% 20% | |
| GENDER Male Female | 50% 50% | An even distribution was the targeted goal. |



APPENDIX



RELATIONSHIP BETWEEN THE SAMPLING ERROR, SAMPLE SIZE AND SIZE OF POPULATION

Have you ever wondered how a national polling company, like USA Today or Gallup, can conduct a national poll that surveys only a small percentage of the population yet captures an accurate picture of public sentiment? Polling companies can do this because the size of the population being sampled, while it can be a factor in the sampling error, is of much less importance than the size of the sample.

The size of the sample, not the population, is the factor that is most directly related to the sampling error. That is, as the sample increases the sampling error decreases. For example a sample of 2,000 has a sampling error of $\pm 2.2\%$ points, whether the population is 500 thousand or 500 million. A sample of 1,000 has a sampling error of $\pm 3.1\%$ points. A sample of 500 has a sampling error of $\pm 4.4\%$ points and a sample of 300 has a sampling error of $\pm 5.7\%$ points. These are estimates of the sampling error of proportions. The actual sampling error is obtained from the data in the survey by computing the standard error for each factor measured in the survey.

The error from the population comes in part from sampling bias or lack of representativeness. The size of the population may also affect the sampling error if the population is made up of people with diverse characteristics, such as the population of an urban area. The more diversity there is in the population, the greater the error for the entire population. Whereas a population that is not as diverse, such as a rural population, would have a dampening effect on the error because there is less variability. If you want to sample an entire County, State or Country, you should include both diverse and similar populations to get a good representation of the overall population, so then the size of the population would have very little effect on the sampling error. A commonly used technique that assures good representation and reduces sample bias is random sampling of the entire population.

Stratified random sampling is used to obtain an adequate sample for each sub-category of the population (such as county within a state) and yet assure that the sample within each county is representative. In stratified sampling, each strata must have a sufficiently large sample to assure the lowest affordable sample error.

Reducing sampling error and assuring sample quality and representativeness comes at a cost. The less error, the greater the cost. There is always a tradeoff between the accuracy of the survey estimates and how much one is able or willing to pay.



Approval: BA ____ CK ____

ID # _____ (1)

ISLAND _____ (2)

- 1 = Oahu
- 2 = Big Island
- 3 = Maui County
- 4 = Kauai

Interviewer _____

Date _____

OMNIBUS HAWAII
QMark Research
AUGUST 2012

Hello, I'm _____ from **QMark Research**. We're conducting a market research survey today/this evening. This is strictly market research as we do no product promotion or selling. May I speak to someone 18 years of age or older who lives in this household?

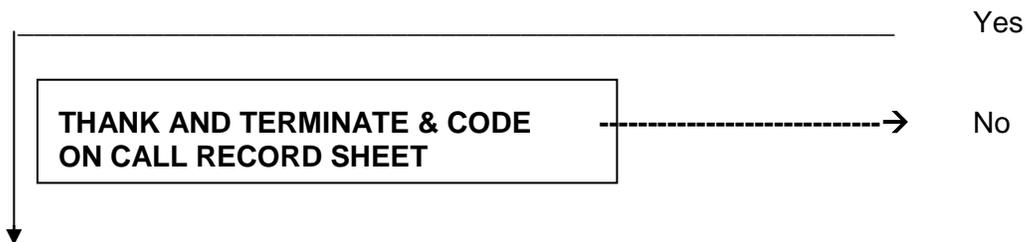
- A. Are you or is anyone in your household employed in marketing, market research, advertising, public relations or active duty military?

[IF "YES", THANK AND TERMINATE, CODE ON CALL RECORD SHEET.]



- B. Are you a resident of Hawaii (lives in state at least 6 months out of year)?

[IF "NO", THANK AND TERMINATE, CODE ON CALL RECORD SHEET.]



And now a few questions on a topic....



11. Please tell me how strongly you agree or disagree with the following statement:

Some types of plants could spread from yards and gardens into forests and natural areas and harm the environment. Do you... **(READ LIST)**

- 1 Strongly Agree
- 2 Somewhat Agree
- 3 Somewhat Disagree, or
- 4 Strongly Disagree
- 5 (Don't Know)
- 6 (Refused)

12. In terms of issues in Hawaii, have you read or heard about the concept known as “alien pest species” or “invasive species”?

- 1 Yes
- 2 No
- 3 (Don't Know)
- 4 (Refused)

13. I'm going to read you the definition for 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 read or heard, would you say that Hawaii's invasive species is a... **(READ LIST)**

- 1 Very serious problem
- 2 A somewhat serious problem
- 3 Not a very serious problem, or
- 4 Not a problem at all
- 5 (Don't Know)
- 6 (Refused)

14. Some ornamental plants that are currently available in stores or over the internet could become invasive if planted in Hawaii. Residents can protect Hawaii by learning about and choosing non-invasive plants. Please tell me if you would be very likely, somewhat likely or not likely to use the following information sources to learn more about invasive and non-invasive plants. **(READ LIST)**

| | Very Likely | Somewhat Likely | Not Likely |
|--|-------------|-----------------|------------|
| Go to a website | 1 | 2 | 3 |
| Read printed information (such as brochures, flyers, etc.) | 1 | 2 | 3 |
| Use a smart phone app | 1 | 2 | 3 |
| Join an online forum with invasive plant experts | 1 | 2 | 3 |
| Call an invasive plant hotline | 1 | 2 | 3 |
| Email an invasive plant hotline | 1 | 2 | 3 |
| Watch online video clips | 1 | 2 | 3 |

- 15a. Are you familiar with the concept of using a plant’s or insect’s natural enemies to control invasive species?

- 1 Yes
- 2 No
- 3 (Don’t Know)
- 4 (Refused)

- 15b. Have you heard of the term “biological control,” or “biocontrol?”

- 1 Yes
- 2 No
- 3 (Don’t Know)
- 4 (Refused)

[IF “YES” to I15a. or I15b.,ASK:]

- I15c. Can you name any successful biocontrol or natural enemy projects conducted in Hawaii?

- 1 No, Don’t know
- 2 _____

16. If a damaging invasive species became too widespread to control by manual labor or pesticides, resource managers may look for a natural enemy (also known as a biocontrol) that could help keep the invasive plant or insect under control.

Before being released in Hawaii, a proposed biocontrol species is tested in quarantine to ensure that it will not impact other species or our environment.

Knowing this, do you ... **[READ LIST]** the use of biocontrols as a tool to help control a widespread invasive species?

- 1 Strongly Support
- 2 Somewhat Support
- 3 Somewhat Oppose
- 4 Strongly Oppose
- 6 (Don't Know/Undecided)
- 7 (Refused)

17. Would you support or oppose an increase in funding for biocontrol research and quarantine testing in Hawaii? **(PROBE:)** Is that strongly or somewhat?

- 1 Strongly Support
- 2 Somewhat Support
- 3 Somewhat Oppose
- 4 Strongly Oppose
- 5 (Don't Know/Undecided)
- 6 (Refused)

18. I am going to read you a list of 8 plants and animals, please tell me whether or not you have heard of each one. First... (READ LIST, ROTATE)

| | <u>Yes</u> | <u>No</u> | <u>D/K</u> |
|---|------------|-----------|------------|
| Brown tree snake | 1 | 2 | 3 |
| Citrus greening | 1 | 2 | 3 |
| Coqui (<i>KO-KEE</i>) frog | 1 | 2 | 3 |
| Little Fire Ant | 1 | 2 | 3 |
| Miconia (<i>MY-KOH-NEE-AH</i>) | 1 | 2 | 3 |
| Invasive seaweed/Alien algae..... | 1 | 2 | 3 |
| Wiliwili gall wasp (aka: <i>AIR-RITH-RAI-NAH</i> gall wasp) | 1 | 2 | 3 |
| Gorilla ogo | 1 | 2 | 3 |

19. If you saw a snake, what phone number would you call to report it?
(DO NOT READ)

- 1 643-PEST (7378)
- 2 586-PEST (7378)
- 3 911
- 4 (Don't know)
- 5 (Refused)

(IF DON'T KNOW OR CAN'T RECITE A NUMBER, ASK:)

19A. "Whom would you call?" **(DO NOT READ LIST)**

- 1 Humane Society
- 2 Animal Quarantine
- 3 State Dept. of Agriculture or HDOA
- 4 USDA (Federal Dept. of Agriculture)
- 5 Police/911
- 6 DLNR (state Department of Land & Natural Resources)
- 7 State Department of Health or DOH
- 8 Pest Hotline (no number)
- 9 Information
- 10 Friends/Family
- 11 University of Hawai'i/Extension Service
- 12 Fire Department
- 13 The Zoo
- 14 I would look in the phone book to find out
- 15 Military office on my base
- 16 Island (Kauai/Maui/Oahu/Molokai/Big Island) Invasive Species Committee/KISC, MISC, OISC, MOMISC, BIISC
- 17 Other
- 18 Don't Know
- 19 Refused

110. I'm going to read you some descriptions on two possible invasive species. For each one, please tell me if you would be very likely, somewhat likely, or not likely to report it.

| | Very Likely | Somewhat Likely | Not likely |
|--|-------------|-----------------|------------|
| a. an unusual stinging ant | 1 | 2 | 3 |
| b. sick-looking or yellowing coconut trees | 1 | 2 | 3 |



(IF VERY OR SOMEWHAT LIKELY TO REPORT IN Q.10, ASK:)

Q10a. Which of the following ways would you most likely use to report _____
 ... over the phone, online through a website, via email, or smartphone app?

| | Over the phone | Online through a website | Via email | Smartphone App |
|---|----------------|--------------------------|-----------|----------------|
| An unusual stinging ant | 1 | 2 | 3 | 4 |
| Sick-looking or yellowing coconut trees | 1 | 2 | 3 | 4 |

111. For Hawaii's grade K to 12 students today, how important would you say it is to require environmental education in their curriculum? Is it...

- 1 Very important
- 2 Somewhat important
- 3 Not too important
- 4 Not important at all
- 5 (Don't Know)
- 6 (Refused)

112. Some invasive species (like coqui frogs or little fire ants) move from one island to another on plants, vehicles, equipment, or on personal goods. How important do you think it is to prevent the movement of these pests between islands?

Is it ... **[READ LIST]**

- 1 Very important
- 2 Somewhat important
- 3 Not too important
- 4 Not important at all
- 5 (Don't Know)
- 6 (Refused)