DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Testimony of
SUZANNE D. CASE
Chairperson

Before the House Committee on
ENERGY & ENVIRONMENTAL PROTECTION

Tuesday, January 31, 2017
8:30 AM
State Capitol, Conference Room 325

In consideration of
HOUSE BILL 606
RELATING TO COUNTY ACCESS TO PRIVATE PROPERTY

House Bill 606 proposes to authorize counties to enter private property for invasive species control. **The Department of Land and Natural Resources (Department) supports this measure.**

The Department manages and is the administrative host of the Hawaii Invasive Species Council (HISC). The HISC is in the process of developing administrative rules to formally designate invasive species for eradication or control, pursuant to Section 194-5, Hawaii Revised Statutes (HRS). The ability of county governments to enter property to control invasive species pursuant to Section 194-5, HRS, or agricultural pests pursuant to Section 141-3.6, HRS, would assist in timely, thorough implementation of invasive species control efforts.

On Page 3, Line 11, the Department suggests further amending Subsection 194-5(a), HRS, to allow agents of state departments or counties to enter private property, in order to be consistent with Subsection 194-5(d), HRS:

> "(a) Whenever any invasive species identified by the council for control or eradication is found on private property, a department or applicable county**, or its agent,** may enter [~~such~~] the premises to control or eradicate the invasive species after reasonable notice is given to the owner of the property and, if entry is refused, pursuant to the court order in subsection (d)."

The Department appreciates the opportunity to provide these comments.

Hawai'i Association of REALTORS®
808-733-7060
808-737-4977
1259 A'ala Street, Suite 300
Honolulu, HI 96817

January 31, 2017

The Honorable Chris Lee, Chair
House Committee on Energy & Environmental Protection
State Capitol, Room 325
Honolulu, Hawaii 96813

RE: H.B. 606, Relating to County Access to Private Property

HEARING: Tuesday, January 31, 2017, at 8:30 a.m.

Aloha Chair Lee, Vice Chair Lowen, and Members of the Committee.

I am Myoung Oh, Director of Government Affairs, here to testify on behalf of the Hawai'i Association of REALTORS® ("HAR"), the voice of real estate in Hawai'i, and its 9,000 members. HAR **supports the intent** of H.B. 606 which authorizes the counties to enter private property to control or eradicate invasive species and pests.

REALTORS® are vitally concerned about issues that affect the value of real property and the quality of life in our State. The introduction and infestation of detrimental invasive species is a growing concern that is increasingly impacting the very way of life for our friends and families in our communities. HAR would support efforts to empower the Counties to join the effort to eliminate this threat.

According to the recently released Hawaii Interagency Biosecurity Plan (2017-2027), Hawaii's ever increasing interconnectedness with the rest of the world has led to an onslaught of exotic species from around the world arriving in our harbors and airports and ultimately becoming established here.

The plan suggests that 10 percent of those invading species will prove to be harmful to our economy, our environment, and our very way of life. Seriously dangerous species like the Little Fire Ant (LFA) have established themselves in various locations in the State, and particularly on Hawaii Island. From there the State has continued to allow the shipment of material infested with LFA to other islands, spreading this potential environment disaster farther.

The Maui Invasive Species Committee (MISC) is estimating that Maui will experience the same level of LFA and coqui frog infestation that is now prevalent in the Hilo and Puna Districts of the Big Island in the next 10 years if governmental agencies do not take a more proactive stance. The Biosecurity plan essentially says the same thing.

Hawai'i Association of REALTORS®
808-733-7060
808-737-4977
1259 A'ala Street, Suite 300
Honolulu, HI 96817

A key part of the eradication effort is the need to address infestations wherever they occur. One major problem is that certain recalcitrant property owners refuse to manage the invasive species on their property and refuse access to State agents to do the work for them. The species then spread to surrounding properties making eradication impossible.

Currently, to enter such properties requires the active involvement of the State Attorney General's office, which does not have a full-time presence on the Neighbor Islands. If the Counties participate in this effort, then the Counties' attorneys can obtain the necessary warrants to enter private property.

HAR feels the current plan for managing detrimental invasive species is not working. Laws that must be amended to correct this situation and give our local communities a better chance at addressing this problem, including Chapter 46, which gives the Counties their powers, and Chapter 194 which makes the State Department of Agriculture the agency responsible for this function.

Mahalo for the opportunity to testify.

Testimony before the House Committee on Energy & Environmental Protection

by
The Hawaiian Electric Companies

Tuesday, January 31, 2017
8:30 a.m., Conference Room 325

House Bill 606 –Relating to County Access to Private Property

Chair Lee, Vice Chair Lowen, and Members of the Committee:

The Hawaiian Electric Companies are submitting this written testimony in strong support of HB 606.

HB 606 authorizes the counties to enter private property to control or eradicate invasive species and pests where landowners either refuse to control or eradicate the invasive species or pests, or do not respond to notices to control or eradicate the invasive species or pests. The Hawaiian Electric Companies support the bill for the following reasons:

- Albizia trees are a hazard to public safety and critical infrastructure.
- Stands of brittle, invasive Albizia trees up to 250 feet tall grow on many private properties. Tropical Storm Iselle brought down many Albizia trees, blocked roadways, and caused millions of dollars in damage to homes and important electric utility lines. Broken tree trunks continue to send out new growth creating even more unstable conditions, while seedlings are rapidly germinating in disturbed areas.
- The ability for the County or State to go onto a private property where the landowner either refuses or fails to respond to a notice to control or eradicate an invasive species or pests, is essential to mitigating issues (like those caused by Albizia trees) and ensuring that Hawai'i's public safety and critical infrastructure needs are met.

Thank you for the opportunity to testify on this matter.

From: mailinglist@capitol.hawaii.gov
Sent: Monday, January 30, 2017 9:32 AM
To: EEPtestimony
Cc: peterw@bestfriends.org
Subject: Submitted testimony for HB606 on Jan 31, 2017 08:30AM

HB606
Submitted on: 1/30/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Peter J. Wolf	Best Friends Animal Society	Oppose	No

Comments: On behalf of Best Friends Animal Society and our many supporters throughout the Hawaiian Islands, I urge the Members of the House Committee on Energy & Environmental Protection to oppose HB606. It's troubling enough that state law already permits government agencies to enter private property for the purpose of "controlling or eradicating" domestic cats, which are considered "invasive species" by the Hawaii Invasive Species Council (H.R.S. Title 12, Chapter 194-5). But HB606 would go even further, extending such authority to counties and any of their designated "agents." While we appreciate the need to protect Hawaii's native plants and animals, the provisions outlined in HB606 are likely to backfire if implemented. Indeed, these policies are not only direct threats to cats—owned and unowned alike—but also likely to have a chilling effect on sterilization programs used to effectively and humanely manage "feral" cat populations throughout the Hawaiian Islands. Many residents who volunteer their time and provide financial support for such programs, for example, would be discouraged if they knew the cats they care for were at risk for lethal roundups—and choose not to participate as a result (leading to more unsterilized cats). We urge you to instead consider laws that would encourage sterilization programs—which, surveys show, enjoy broad public support. A Ward Research survey of residents of Hawaii, for example, found 85% support, compared to just 15% support for "trap-and-kill programs." HB606 is a betrayal of the public's trust in private property rights, government transparency, and due process. Please oppose this harmful bill.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

From: mailinglist@capitol.hawaii.gov
Sent: Friday, January 27, 2017 10:39 PM
To: EEPtestimony
Cc: williamrandysmith@gmail.com
Subject: *Submitted testimony for HB606 on Jan 31, 2017 08:30AM*

HB606
Submitted on: 1/27/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
William R Smith	Individual	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

From: mailinglist@capitol.hawaii.gov
Sent: Monday, January 30, 2017 2:43 PM
To: EEPtestimony
Cc: evandlin@twc.com
Subject: Submitted testimony for HB606 on Jan 31, 2017 08:30AM

HB606
Submitted on: 1/30/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
everett fritz	Individual	Comments Only	No

Comments: I'm totally in favor of this bill. There are too many properties going unmanaged that create a "home" for invasive species such as LFA and Coqui. We need to do something about it.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

DAVID Y. IGE
Governor

SHAN S. TSUTSUI
Lt. Governor

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

LATE

TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

JANUARY 31, 2017
8:30 A.M.
HOUSE CONFERENCE ROOM 325

HOUSE BILL NO. 606
RELATING TO COUNTY ACCESS TO PRIVATE PROPERTY

Chairperson Lee and Members of the Committee:

Thank you for the opportunity to testify on House Bill 606, which allows for additional enforcement and regulatory action to address invasive pest species issues. The Department supports the intent of this bill.

The Department works closely with each island invasive species committee (ISC), often to address early post-entry invasive pest establishment. In working with the island invasive species committees, it is critically important to address a new invasive pest species as soon as it is detected. If the intent of this bill is to empower county ISCs, then the measure improves the odds of successful eradication of an invasive pest by leveraging enforcement resources. Recent serious invasive pest species outbreaks such as the little fire ant and coqui frog are excellent examples how the Department and the island invasive species committees can move quickly to eliminate newly established invasive pests as long as access to private property is secured.

Thank you for the opportunity to testify on this measure.

Island Fresh

ALAN M. ARAKAWA
MAYOR

200 South High Street
Wailuku, Maui, Hawai'i 96793-2155
Telephone (808) 270-7855
Fax (808) 270-7870
E-mail: mayors.office@mauicounty.gov

LATE

OFFICE OF THE MAYOR
Ke`ena O Ka Meia
COUNTY OF MAUI – Kalana O Maui

January 30, 2017

I am submitting testimony in STRONG support of HB606 on behalf of Maui County Mayor, Alan M. Arakawa.

This bill will provide the counties a clear tool that is not currently available to us – the authority to enter private property, with the proper court authorization, in order to eradicate invasive species that could be harmful to public health and safety.
Maui County is currently fighting to stave off an infestation of many invasive species. Some of which include: Little Red Fire Ants (LFA), Coqui Frogs and Coffee Borer Beatle (CBB).

LFA has proven to be a threat to public health and safety. The Maui Invasive Species Committee (MISC) and the Ant Lab has had several property owners or lessees block access to their properties when they tried to address LFA eradication. The state department of Agriculture was able to obtain a court order, eventually, that allowed MISC and the Ant Lab to do their assigned duties. However, this is only one instance of many that are currently being faced by these agencies. There are people in Haiku and Nahiku still blocking access to their property to fight LFA and coqui frogs. We are currently getting CBB infestations in the Hana area and already getting resistance from one property owner. The DOA does not have the manpower or resources to get court orders to help these agencies work on the eradication of these pests. I firmly believe that the counties can be effective where the DOA is not able to be due to their restrictions.

Therefore, I strongly urge the passage of this bill.

Sincerely,

Alan M. Arakawa
Mayor, County of Maui

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, January 31, 2017 5:11 AM
To: EEPtestimony
Cc: Westhawaiihumanesociety@gmail.com
Subject: Submitted testimony for HB606 on Jan 31, 2017 08:30AM

HB606
Submitted on: 1/31/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Inga Gibson	West Hawaii Humane Society	Comments Only	No

Comments: Dear Chair Lee and EEP Committee members, We appreciate the intent of HB606 to allow counties the authority to address invasive species issues such as little fire ants and rapid ohia death. Some have suggested that feral cats be classified as an invasive species, which has created concern among pet owners and cat caregivers. While we understand that is not the intent of this measure, to alleviate these concerns, we recommend an exemption and/or clarification in the committee report that this measure not apply to dogs or cats. Thank you for your consideration. Inga Gibson Policy Consultant West Hawaii Humane Society 808.922.9910

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

LATE

Reducing Homeless Cat Populations on Kauai

Compassionate Approaches are Working Better

Many people see trapping, removing and killing homeless outdoor cats as a necessary, fast and permanent way to reduce the cat populations, but the real experience on Kauai shows otherwise. An estimated 12,000 [i, ii] homeless cats live in Kauai's towns and neighborhoods. Over the last decade, about 23,000 of these "community" cats have been trapped, removed, and killed.[iii] And yet, their numbers seem relatively unchanged.

The primary reason for this apparent contradiction is the cat's high reproductive rate. Homeless female cats, living outdoors without optimal nutrition, can produce up to 550 kittens per 100 adult females each year.[iv, v] After cat removal, population growth rates can be as high as 95%.[vi] Since this greatly exceeds the 20% annual catch rate, no significant population reduction was ever possible.

While most of the cat removal has been geographically scattered and short-term, some has focused within specific areas for longer time periods. This is more likely to achieve the high removal rates necessary to reduce cat populations significantly. To assess how well these focused removal efforts are working on Kauai, KCCP obtained records of 16 such projects.[vii] These were conducted over the last 6 years, and trapped about 500 cats.

None of these have permanently removed the cats, and three were intentionally stopped due to exploding rat populations. Total population suppression is estimated at 255 cats,[viii] or 2.1% of the island total. The most successful projects are in four wildlife areas where continuous trapping is employed: within these areas population suppression is over 90%. For the other areas, it was only 30%. The low rate is due to intermittent trapping and subsequent repopulation from high birth rates and immigration.[ix]

Since cats' high reproductive rate is the primary factor that is confounding efforts to reduce the population, why not target their reproduction? This is what TNR does.

In the last decade, about 5400 cats have been Trapped-Neutered-Returned[x] (TNR'd) on Kauai,[xi] and these projects have reduced the island-wide population of neighborhood cats by an estimated 2200,[xii] or 18%. The estimated population suppression from trapping and killing over four times the cats – the 23,000 – is only 11%.[xiii]

In addition to reducing cat populations, TNR also reduces predation [xiv, xv, xvi, xvii] and disease[xviii, xix] for the cats that remain. The total impact mitigation from the combination of population reduction, less predation and reduced disease is much greater than the 18% through population reduction alone. Analysis shows it's up to 30% island-wide.[xx]

TNR is significantly less expensive than trap and remove,[xxi] has proven that it can scale island-wide, and is working better! It should be the preferred method to resolve cat population problems within our towns and neighborhoods.

To fully solve the community cat problem we must address its source. Both sides of the debate agree on this. That means available, inexpensive spay/neuter for all. A low kill rate approach like TNR is needed for those who see lethal removal as unacceptable and who won't cooperate if this is the only supported choice.[xxii]

References and Notes

[i] Feral Cat Task Force Final Report, from Accord3.0 Website, http://www.accord3.com/pg79.cfm, estimate is 15,000 to 20,000 in wild and populated areas combined.

[ii] Scott, Kauai's Feral Cats, The Scope of the Problem, 2013. This is source of the Feral Cat Task Force estimate, and it shows that about 75% live in populated areas. Available on request.

[iii] From Kauai Humane Society statistics, FOIA information from US Fish and Wildlife, and UIPA information from Hawaii's Dept. of Land and Natural Resources. See Appendix 2.

[iv] Nutter, Evaluation of a Trap-Neuter-Return Management Program for Feral Cat Colonies: Population Dynamics, Home Ranges, and Potentially Zoonotic Diseases, NCSU Comparative Biomedical Science, 2005. The author reports on a sample of over 2000 cats.

[v] Schmidt et. al., Survival, Fecundity, and Movement of Free-Roaming Cats, Journal of Wildlife Management 71(3):915–919; 2007)

[vi] Appendix 1, calculation 1

[vii] KCCP obtained information from State and Federal agencies via information requests. KCCP itself removed certain cats (non-lethally). Records from 19 projects were obtained, but long-term results are not known for 3 of these. See Appendix 2.

[viii] Appendix 1, calculation 2

[ix] Miller et. al., Simulating Free-Roaming Cat Population Management Options in Open Demographic Environments, PlosOne, 2014

[x] TNR (Trap-Neuter-Return) captures fertile cats, surgically sterilizes them, returns them to their outdoor home, and then manages the cats to reduce their population over time.

[xi] Estimates from KCCP data (2007 – present) and Kauai Humane information, see Appendix 3

[xii] See Appendix 3.

[xiii] See Appendix 1, Calculation 2.

[xiv] TNR Fact Sheet 2, Predation, http://voxfelina.com/voxfelina/Vox_Felina_Fact_Sheet_Predation_v_1.1.pdf

[xv] Loyd et. al. Quantifying free-roaming domestic cat predation using animal-borne video cameras, 2013

[xvi] Silva-Rodríguez, E.A. and Sieving, K.E., "Influence of Care of Domestic Carnivores on Their Predation on Vertebrates." Conservation Biology 2012. 25(4): p. 808–815.

[xvii] From FOIA, US Fish and Wildlife field notes, 20140114 Email Marie McKenzie to Kim Uyehara_Botulism DB.pdf

[xviii] Nutter, Evaluation of a Trap-Neuter-Return Management Program for Feral Cat Colonies: Population Dynamics, Home Ranges, and Potentially Zoonotic Diseases, NCSU Comparative Biomedical Science, 2005

[xix] VanWormer, Toxoplasma gondii, Source to Sea: Higher Contribution of Domestic Felids to Terrestrial Parasite Loading Despite Lower Infection Prevalence EcoHealth, September 2013

[xx] Appendix 3

[xxi] Zawistowski et. al., Simulating different approaches for managing free-roaming cat populations, ACC&D, 2011

[xxii] On Kauai, animal abandonment rates tripled in some areas after high kill rates for cats at the Kauai Humane Society became highly publicized in mid-2013. Requests for no-kill service from KCCP have tripled since then as well.

Appendix 1: Calculations

Calculation 1: Cat Reproductive Rate

All estimates are from mainland studies, and many feel that birth and survival rates would be higher on Hawaii due to full-year breeding seasons and richer environmental resources.

	Nutter North Carolina	Schmidt et. al. Texas
Birth Rate	4.2 (median)	5.6 (mean)
Kitten Survival	50% (3 months), 25% (6 months) *Est. annual: 17%	50% (3 months, feral) 75% (3 months, semi) Est. Annual: 30%, 20%
Population ratio M/F	33%/67%	Not given
Adult survival M/F	0.40 / 0.60	0.57 / 0.88
Total Birth rate	50% or 0.5	80% to 120% or 0.8 to 1.2
Population growth rate, r	3% or 0.03	60% to 95% or 0.6 to 0.95

*Nutter presents a Kaplan-Meier analysis indicating that after 125 days, kitten death rates approach those of adults. Accordingly, annual death rates are calculated by:

$$6\ month\ survival \times \sqrt{adult\ annual\ survival} = kitten\ annual\ survival$$

Nutter's death rate of 47% is very close to the birth rate, so this represents a stable population, as one would find in a "full" biological environment.

Schmidt's data suggests that higher values are possible when food is plentiful. This value is used in analysis below (Calculation 2) for maximal rates when cats are removed from an area.[i] These birth rate values greatly exceed the death rate, so that the population growth rate is quite high.

Multiple authors report lower numbers as well, with birth rates as low as 40% of Nutter's. These suggest negative population growth rates (contraction) when populations are too high, i.e. above the environment's carrying capacity.

We believe this analysis is conservative for Hawaii. Lohr postulated birth rates of 0.75 for Hawaii under normal situations.[ii] This would suggest population growth rates, r, of 0.55, just under Schmidt's lower value. This higher value supports the assertion by many that birth and population growth rates will be higher in Hawaii due to its warm climate.

Calculation 2: Island-wide impact mitigation from Trap and Remove

Details for the population suppression resulting from removal of the 23,000 cats in the last decade are presented below. Some of the trapping was focused, for example, local hotels that trap cats on their property. Most of the trapping was not focused, e.g. residence obtained a trap from KHS, trapped one or two cats on their property, and returned the trap.[iii]

Known Focused Trapping at 16 locations
The island-wide neighborhood cat mitigation from known focused trap and remove can be determined from the tables in Appendix 2. Some of this trapping was in wildlife areas adjacent to but not within neighborhoods. Nonetheless, all the cats are included. Total cat suppression is estimated as 255 of the original population. This is a 2.1% reduction of the island-wide total of 12,000 neighborhood cats. This trapping was performed on an estimated original population of 480 cats, or 4% of the island-wide total.

Trapping for 22,500 Cats: Casual, Intermittent Focused, and Continuous Focused
The results from Appendix 2 are used as a model. An estimated 20% of the trapping is focused in one area.[iv]

	Focused, Continuous	Focused, Intermittent	Casual
Percentage of trapping	5%	15%	80%
Population suppression	80%	20%	10%*
Total, Island-wide	4%	3%	8%

*The justification for the 10% value is shown in calculation 3.

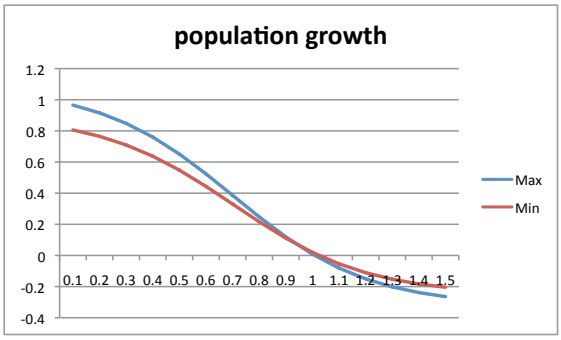
Total population suppression is 15% of cats from the entire population less cats in the known focused trapping or under TNR management. Thus, total cat suppression is:

15% x (100% - 4% - 34%) = 9.3% or 1120 cats

Combined total: 9.3% + 2.1% = 11.4% or 1375 cats

Calculation 3: Casual Trapping Metrics

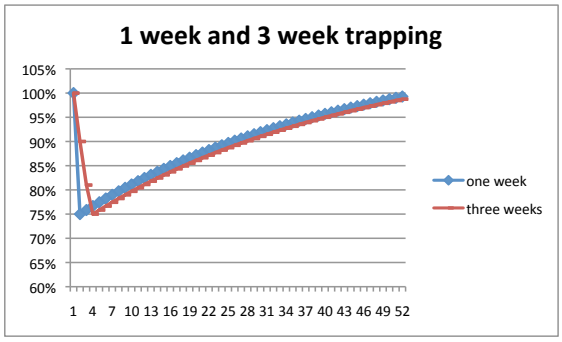
The estimated effect of casual trapping is based on a growth rate analysis. Two logistic growth curves are shown in the graph at the right, based on values from Schimdt et. al., which was referenced in calculation1 above. The values establish a range for maximum values of the logistic function, which occurs for very low population levels. The value at a 100% population level (biological carrying capacity) is very near zero.



The number of animals trapped annually in casual trapping is 80% of 22,500/10 or 1800. This is 25% of the of the total cat population of 7000 that is being casually trapped.[v]

At a population level of 75%, the growth rate (27% to 31%) exceeds the removal rate. Immigration, while modest, adds more. Simplistically, this means there is a zero population reduction. This is not what actually happens. In a real situation, there is a time lag between cat removal and cat rebound. The length of time between removal and rebound back to a 100% population level determines the average number of cats and thus the degree of cat suppression.

Two examples are shown in the graph. One traps 25% in 1 week. This might correspond to removing one cat from a small neighborhood population. The second traps 5 cats in 3 weeks. This might correspond to removing 5 cats from a condominium area. Each shows a resulting annual average cat population of approximately 90%. Thus, the cat suppression from ongoing casual trapping is approximately 10%. In both cases, the permanent suppression is zero, i.e. the cat population returns to 100% after about one year.



Population rebound within one year is very typical on Kauai, so both examples are realistic.

References

[i] Maximum populaiton growth rates, r, are assumed when 80% of cats are removed; for lesser removal percentages, the maximal rate is linearly prorated to lower values.

[ii] Lohr, C. et. al, Costs and benefits of trap-neuter-release and euthanasia for removal of urban cats in Oahu, Hawaii, Conserv Biol. 2013 Feb;27(1):64-73. doi: 10.1111/j.1523-1739.2012.01935.x. Epub 2012 Sep 25.

[iii] KCCP requested data from KHS to determine how much focused trapping versus scattered trapping has been performed in the last 6 years, but KHS declined to provide the information.

[iv] Apparent continuous trapping is between 5% and 10% based on anecdotal observations in the KHS lobby (random sampling). Here the assumed 20% is quite high and thus conservative.

[v] 12,000 – 440 (16 known trapping areas) – 620 (focused trapping) – 4080 (TNR) ≈ 7000

Appendix 2: Trap and Remove Activities Analyzed on Kauai

	Location	Date	Event	Outcome	# rem	base #	Source	remain	Comment
1	Salt Pond 1	mid-2012	30 cats removed	cats back by mid-2013	30	40	ACO/KHS	100%	
2	Salt Pond2a	late 2014 - mid 2015	2 TNR colonies removed (17) plus additional 20 (estimated)	cats back by late 2016	37	40	ACO	100%	near complete removal
unk	Salt Pond 2b	late 2014 - mid 2015	total of 70 cats removed by ACO, but some were from park	one time trapping; estimated return rate to wild area is 0.1	50	55	ACO	25%	% remain estimated from immigraiton rate = 0.1
3	HNWR	2010 - 2015	continuous trapping	cats contuously present but at very low levels	130	90	USFWS	5%	base numbers are projected from immigration rates of .25, .25, .05 and 0.8 growth rate
4	KNWR		intermittent trapping		70	50	USFWS	5%	
5	HNWR		intermittant trapping		15	10	USFWS	10%	
n/a	mahalepu	2013	58 cats removed from wild areas and near GC	unknown **this is mostly a wild area and is excluded	58		DLNR	excluded	
6	Kukuiula	mid-2015	cats removed	all cats returned in ~1 year	12	15	KCCP	100%	cats now in a rescue
7	Larsen's beach	mid-2015	10 colony cats plus unknown other cats	subset of cats back in 4 months **wild area abuts farms and illegal camping areas	20	25	KCCP	70%	based on reports from illegal campers
8	Small boat harbor	late 2015 - early 2016	colony of 25-30 apparently removed	cats gone for several months, but a large populatio is back in 6 months	25	30	KCCP & ACO	100%	virtually no effect
9	Waimea PC	late 2015 - early 2016	~ 10 cats removed from one area, but other cats present on the property	cats continue to be present with no reported bird issues	10	12	KCCP	50%	

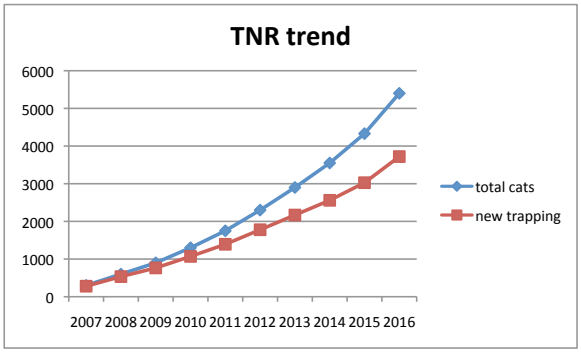
	Location	Date	Event	Outcome	# rem	base #	Source	% remain	Comment
10	Coffee fields	10 & 11 2014	trapping near bird colonies	11 cats trapped, but assess that cats are still present	11	15	DLNR	100%	due to non-continuous
11	Kaumakani	Oct 2014 - Jan 2015	trapping near bird colonies	4 cats; OK for several months; but trapping stopped	4	4	DLNR	100%	due to non-continuous
	Private trapping, Albatross	2014	30 cats removed	unknown **excluded; too little is known	30		COK UIPA	excluded	
12	Princeville SC	2012	12-15 cats removed	large number of rats; 5+3 cats brought back	15	15	KCCP	50%	
13	Regency Resort	2016	maintained colony removed	rat invasion; unk number of cats brought in	12	12	KCCP	50%	estimated # cats returned
14	PMRF base	2013	cats on base removed	rats eating signal cables; allowed TNR on base	30	35	KCCP	50%	based on volunteer information
15	PMRF wetlands	2013-2105	cats removed around wetland restoration	ongoing cat removal; no reports of predation problems	50	25	DLNR	10%	DLNR data
16	Lagoons GC	ongoing	cats removed in nesting season	~10 cats removed annually	30	10	DLNR	50%	ongoing with 6 months on, 6 months off

Summary:

reduction in 4 continuous areas	93%
reduction in 5 intermittent areas	31%
reduction in 7 one time areas	29%
total original cat population (est.)	483
cats removed (est.)	255
percentage removed	53%

Appendix 3: TNR Conducted over the Last 10 Years

About 5400 cats were trapped for TNR over the last decade. Data is from KCCP, KHS and members of the community who practice TNR independently. The KHS data is used to estimate TNR spay and neuter done by volunteers not associated with KCCP.



Many of the cats trapped are within areas where 100% of cats have already been spayed or neutered, but new cats have immigrated in. These are designated as re-trapped cats. The re-trapping is necessary to maintain population counts at reduced levels and quantifies the inefficiency caused by cat immigration.

Total cats trapped	5400
New Cat Trapping	4080
TNR population reduction	1165
Cats pulled	1005
Total population reduction	2170
Reduction within TNR areas	60%
Island Population %	18%

Explanations:

- New Cat Trapping is the initial near-100% trapping that occurs when TNR is started in a new area. For example, if trapping was conducted in 50 areas, which altogether contained 600 cats when trapping started, then New Cat Trapping would equal or be very close to 600. However, after the initial trapping, additional trapping would occur in these areas due to immigration of new cats. This might result in total trapping of 750 cats.
- TNR population reduction is the attrition from natural causes or accidents.
- Cats pulled are the adoptable animals that were removed

TNR provides mitigation in addition to the direct population reduction because disease is reduced by 60% to 75% (see sources in main paper). Predation is reduced by 75% to 90% according to various sources (see main paper). Calculating both as a 75% reduction gives the following:

Reduction from 100% in TNR area	60%
Remaining cats in TNR area on average	40%
Mitigation of disease and predation	75%
% disease/predation remaining	10%
% of total neighborhood cats TNR'd	4080/12000 = 34%
Total island-wide mitigation	30%

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, January 31, 2017 4:40 AM
To: EEPtestimony
Cc: owlit1@gmail.com
Subject: Submitted testimony for HB606 on Jan 31, 2017 08:30AM

HB606
Submitted on: 1/31/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Frances Pueo	Individual	Oppose	No

Comments: HB NO 606 Bill For- An Act Relating for County Access to Private Property, I am against Bill for an Act No. 606 : 1. This Bill is poorly written and will allow misuse of County by giving the authority to identify what they consider an invasive species or pest and super powers to disregard the rights and privacy of a home or private property owner. 2. This Bill should be written more specific to identify with examples what is considered a pest and invasive species as 99.9 percent of plants, animals (yes cats and dogs) could be termed as pest, and invasive species. 3. The matter of control is very concerning, does this mean poisons as pesticides? To use poisons as considered safe spraying into our environment by County is already an ongoing controversy. 4. I understand why it is necessary to eradicate or control fire ants for example, or Coqui frogs, or certain tree species, but this bill does not state such examples. It gives the County much too much bullying power as a police state and subject for misuse. Respectfully yours Frances Pueo (808) 769-1128 P.O. Box 943 Mt. View, Hi 96771

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

LATE

This statement supports the adoption of House Bills 606 and 904, proposed statutes that, respectively, allow county officials to more effectively contend with the many harmful invasive species that threaten our communities and establish the fiscal architecture to fund such efforts. It also supports the adoption of Senate Bill 637 that addresses county access to private property as a counterpart to HB 606.

In Hawaii, infestations by invasive species already constitute public nuisances under both statutory and common law. Moreover, public nuisances are particularly suited for class action treatment under Hawaii law due to both the liberal standing rules that allow members of the public to institute such cases and the various obligations of state agencies to police and combat invasive species infestations. Those types of cases, however, are not the best use of state judicial resources nor are they effective to timely address the nature of the problem. A statute that allows the state to more rapidly intervene and assist in active management of invasive species is preferable to any such litigation.

Communities such as ours in Holualoa are beset by invasive species that by nature and effect have no relation to the individual properties that constitute those communities. In fact, individual property rights, the rules of homeowners associations, absentee ownership, and the various government property rights are often functionally inimical to effectively contending with these species. Swift and coordinated cooperation is essential, yet is often lacking when it comes to current efforts to deal with invasive species that have existed for many years already. As a result, those issues have become worse. If the government of Hawaii is serious about doing something about invasive species, action to prevent individual property rights from trumping community based health and safety concerns is essential.

In short, insects, frogs, fungi, and bacteria don't care where property lines are or who "owns" what. They will exploit any chink in the armor we are attempting to use to defend our communities from them, whether those chinks are absentee owners of properties who are unaware of any issues or property owners who intend to obstinately obstruct any sound strategy to deal with them. Invasive species can't be effectively dealt with unless there is a coordinated approach that allows for treatment of the broader areas they are invading.

Another chink in that armor is the current lack of funding required to deal with invasive species. Not establishing permanent, adequate moneys to address the fight against invasive species is irresponsible and would belie any stated intent to address the many economic, health, and safety concerns involved in this important area of government responsibilities.

As a result, I urge you to pass both HB 606 and HB 904.

Respectfully,

Clyde Platt

77-113 Kalaniuka St.
Holualoa, HI 96725

lowen2 - Mark

From: Carolyn Dillon <carolyndillon4@gmail.com>
Sent: Monday, January 30, 2017 7:12 PM
To: EEPtestimony
Subject: Energy & Environmental Protection Committee- HB606

LATE

Hearing scheduled for January 31, 8:30am

Thank you for consideration of my testimony. I'm strongly in favor of HB606.

The general public is still not aware that the west side of Hawaii County has many large areas of infestation all up and down the coastline. As a community I have worked with my neighbors in a 1/2 mile radius to educate and encourage property owners to test and treat their LFA. The more contacts I make the larger the area of known infestation grows.

I've been able to engage a large portion of this neigborhood (approx 25 acres) to follow the directives of Big Island Invasive Species Committee (BIISC) for remediation, but many neighbors in every directions are unwilling to address the infestation upon their lot. After numerous offers of help, several attempts at persuasion, and then finally escalating to begging and pleading, numerous neighbors are obstinately unwilling to take responsibility for the public nuisance they persist in allowing upon their lot.

I'm aware that the Hawaii Interagency Biosecurity Plan (HIBP) delves into strengthening criminal charges for such behavior, but that does not address the immediate need for remediation. The longer the delay the more entrenched the LFA become. The LFA infestations increase not in a straight line but exponentially. Accordingly, economic, environmental, social and health degradations climb.

This Bill is an imperative for LFA control...we must act now before we pass the tipping point.

Mahalo,

Carolyn Dillon

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, January 31, 2017 9:41 AM
To: EEPtestimony
Cc: skaye@hawaii.edu
Subject: *Submitted testimony for HB606 on Jan 31, 2017 08:30AM*

HB606
Submitted on: 1/31/2017
Testimony for EEP on Jan 31, 2017 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Springer Kaye	Big Island Invasive Species Committee	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov