

# Envirotalk



GOVERNMENT OF BERMUDA  
Ministry of The Environment and Sports

WINTER 2009  
VOLUME 77 No. 4

PROMOTING APPRECIATION, ENHANCEMENT AND CONSERVATION OF BERMUDA'S ENVIRONMENT

## WELCOME

### In this issue...

- **Kim Burch**, Laboratory Technician, gives us some tips on keeping our Christmas poinsettias all year round.
- **Patricia Begeman**, Environmental Officer, provides an update on the ongoing, inter-ministry initiative to remove abandoned boats from the waters around Bermuda.
- **Jonathan Nisbett**, Veterinary Officer, explains why feral animals are such a huge problem in Bermuda.
- Check out our recipe for Cassava Pie, just in time for Christmas.
- As usual we have our Winter planting calendar.
- Finally, we've got the answers to the Fall crossword along with the new winter crossword.

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## AFTER SEASON POINSETTIAS

If you are anything like me, you put off putting away your holiday cheer until the very last minute. You slowly pack away the decorations, remove the tree, turn down the Christmas music and eat the last of the Christmas turkey. You gaze at your poinsettia, which is still in bloom, on the dining room table and wonder if you can keep it going just a little longer this year. Well if you are like me and you want to see your poinsettia for a little while longer, follow these steps to see a longer living poinsettia plant.



### **December – January**

During this time of the year, your poinsettia needs very little care. Remember to water it correctly (do not overwater) and do not allow the plant to dry out. Add a bloom boost fertilizer

or an all purpose fertilizer at half strength to keep the flower colour longer.

### **February – March**

Continue to fertilize at half strength every other watering. Once the flowers start to fade, prune back the plant to about eight inches high with one or two leaves per branch. When pruning, use gloves, as the milky sap from poinsettias can cause skin irritation to some. Remember to use clean shears as fungal infections are common with poinsettias. After pruning, decrease the amount of water and allow the soil to dry about two inches into the pot. Do not fertilize at this time. The poinsettia should be placed in an area with indirect or filtered light.

### **April – June**

By late April, increase the amount of water and use an all purpose fertilizer at half strength, every two to three weeks. When the plant appears to be growing vigorously (late May) re-pot the plant to allow for better growth. By June the poinsettia should be ready to plant outdoors. Remember to plant the poinsettia in an area where it is protected from harsh winds. If you do not wish to plant it outside, leave it indoors away from direct sunlight.

### **July – September**

Pinch back the branches about two inches in mid-July to promote dense and bushy growth. Do not prune after 1 September. If you are looking for your poinsettia to bloom, the poinsettia needs approximately 14 hours of dark and approximately 10 hours of light, to do this. Placing it appropriately (closet and windowsill respectively) will allow it to bloom after a 9–10 week period. Please note that the light cycle must be strictly adhered to.

## **October – November**

After approximately 10 weeks the bracts should develop and you can move the poinsettia to its permanent Christmas home. Remember to water it correctly and enjoy your poinsettia over the holiday season.

*Kim Burch*

*Laboratory Technician*

*Department of Environmental Protection*

## **ABANDONED BOAT REMOVAL PROGRAMME**

Have you noticed that there are fewer abandoned boats and punts cluttering up our foreshores and public docks, or have you received a warning that your boat is not properly registered? If so, you'll know that an inter-Ministry initiative is well underway to remove unregistered boats from our shorelines.

Over the years, many boats have been left unattended on moorings, public docks, and foreshores, only to become eyesores, potential hazards to navigation, and threats to our environment.

Beginning in August 2009, representatives from the Department of Marine and Ports, Marine Police, Ministry of Works and Engineering, Department of Conservation Services, Department of Environmental Protection, Department of Parks and Department of Communications and Information pooled resources and information to start tackling what is turning out to be a huge task of removing unregistered boats.





To date, five boats and two punts were taken from Lagoon Park (Hospital Crawl); 10 large boats from Mills Creek, six from Mullet Bay, 35 unregistered punts and 15 unseaworthy punts from Jews Bay, and seven boats and one jet ski from the Ely's Harbour area. Those boats that are salvageable are taken for safe storage for later collection by the owners or possible resale. The unsalvageable boats are disposed of at the appropriate waste facility after the removal of hazardous components. Other areas to be targeted this year are St. David's and Grotto Bay.

Not only has the visual amenity of the bays and docks been improved after the removal of the wrecks, but the environment has been improved too. Some of the derelict boats still contained lead acid batteries, fuel and oil, and many were disturbing the growth of new mangroves or sea grass beds, or were providing breeding grounds for mosquitoes.

We are grateful for the diving, lifting, and towing services generously provided by Mills Creek Marine Ltd, Atlantic Mooring Maintenance and Desmond DeShields, and for the many residents who pitch in to help.

Boat owners are reminded to ensure that their boats display registration numbers on the port and starboard sides near the bow, and the current decal on the starboard side near the bow.

*Patricia Begeman*

*Environmental Officer*

*Department of Environmental Protection for the Vessel Disposal Committee*

## FERAL ANIMALS: A PROBLEM ROOTED IN 'LOVE'

### What's a feral animal?

Wikipedia, the online encyclopedia, defines a feral organism as one that has *"escaped from domestication and returned, partly or wholly, to a wild state. The introduction of feral animals or plants to their non-native regions...can disrupt ecosystems and may, in some cases, contribute to extinction of indigenous species."* While disruption of ecosystems and extinction of species are very important, there are also major economic and potential communicable disease components to Bermuda's feral populations.

### Bermuda's feral animals

Chickens, pigeons, ducks, cats, rabbits, guinea pigs, and red-eared sliders are some of the feral species found throughout the parks, open lands, woodlands, farms, golf courses, ponds, urban and residential areas of Bermuda. One theory states that the feral chicken and pigeon populations began as a result of coops being destroyed and birds being released during major hurricanes. While the theory can be debated, it is clear that the cats, guinea pigs, rabbits and slider populations did not begin through a similar act of God. No matter what theory is proposed or opinion held, the root cause behind these feral populations has always come down to a single entity: the human.

In some cases, people willingly contribute to the feral animal population because they have a distaste for euthanasia of an unwanted pet. "After all," they think, "what's the harm in one more cat, chicken, rabbit, guinea pig?" as they release the animal into one of Bermuda's parks, open spaces or nature reserves. Spittal Pond, Devonshire Marsh, Paget Marsh, Clearwater Park, and Warwick Long Bay Park are just a few of the areas that commonly receive unwanted pets, dumped and abandoned to fend for themselves. A distaste for euthanasia is an understandable motivation, but the resultant actions have brought undesirable consequences.

### What sustains these feral animals?

That which sustains the chickens, cats, etc. is the same that sustains any population: Energy; energy derived from food. Dishes of commercial animal feeds, loaves of old bread broken into convenient-sized pieces, left-over bits of meals and snacks are examples of human-supplied foods that are sufficient to produce and sustain rather healthy looking populations of chickens and cats. The energy in these diets is sufficient not only to sustain the existing individuals, but also allow the populations to reproduce; and, in the case of chickens, to reproduce at an unchecked rate.

The comic, observed irony is that cats are commonly seen waiting for the chickens to finish eating before moving in themselves. The relative to the 'king of the jungle' is not king at the feeding station. The cats have learned that they need not work to kill a chicken for food, but just wait and humans

will supply all of their nutritional needs... and the needs of their young too! In addition to the intentional feeding, there is the unintentional feeding. Trash in paper bags, plastic bags, open containers or no container at all makes for an easy food source for feral animals.

### **Is there a feral animal problem?**

Well, there's a question that may or may not have crossed your mind. Have you tried to picnic at Clearwater Park recently? Have you visited the Botanical Gardens, Warwick Long Bay Park, the Hamilton Bus Terminal or driven by an agricultural field lately? Besides who, what greeted you as you left the airport arrivals area? We do have a problem, and the impacts of our feral animals are diverse and costly.

### **Impacts**

#### ***Crop loss***

Chickens are a common sight in an agricultural field. Beyond eating seed, the chickens will peck at the growing crop. The bird will not eat the entire crop, but simply damage it enough to render the crop un-saleable.

In November this year, one farmer working a field in St. David's, reported the loss of a field of broccoli. The loss translated to a loss of \$25,000 per acre. That was one farmer, one field, one crop, one harvest. Extrapolate that loss to fields throughout Bermuda, 2-3 harvests per year and the broad variety of fruits and vegetables. A conservative estimate of crop losses easily exceeds \$500,000 annually. Who pays? One way or the other, you pay! Either the farmer passes that loss onto the consumer or the farmer absorbs the loss, making the industry less sustainable. Either way, you lose.

#### ***Soiling of parks – Disease concerns***

Our recreational spaces contain faecal droppings from the large number of feral animals. Whether on grass or in sandy play areas, the faecal matter represent a potential source for bacteria, viruses or parasites and thus a significant health hazard to users of the parks, especially to the young and those with compromised immune systems.

Although no longer in the news, avian influenza remains a concern, as well as other bacteria and viruses that could reside within the feral avian or feline populations. These populations will not receive veterinary care as would your domestic animal. While Bermudians don't have the close contact with chickens as was seen in Asia during the Avian Influenza outbreak, our feral chickens are becoming more brazen and due to feeders, are having increased human contact. Also our indoor/outdoor pet cats will interact with feral cats, and potentially carry disease-causing organisms back home.

#### ***Aviation Safety***

Bermuda has not seen large populations of Canada Geese such as that which brought down US Airways flight 1549 into the Hudson River. Nonetheless,

the persons responsible for the safe operation of the L.F. Wade International Airport have reported an increased number of bird strikes this year. Birds of all sizes, especially in large number, are a clear threat to aviation. The number of strikes must be reported to international airport authorities, and so this cannot be Bermuda's closet secret.

The night heron seems to be the main bird when it comes to bird strikes at L.F. Wade Airport. Nesting sites seem to be about the airport area. There is evidence that food left for the chickens and cats is also being taken by herons, thus contributing to their existence and reproduction. While we have had no reports of planes encountering chickens, until recently, chickens were invading the aircraft parking area, and had no further barriers to the taxiways and runway. The chickens have been reduced, nearly eliminated.

### ***Personal injury***

There has been an incident of personal injury from a chicken. Circumstances suggest that the bird felt that its clutch of young was being threatened by the little boy. Whether or not the young boy was at fault, these types of interactions will continue as the populations of feral animals grow.

### ***Sleep disruption***

The crowing of roosters can be heard throughout the Island around daybreak. However, not all of the roosters have their clocks set correctly, and disruptive crowing can occur during late night and wee hours of the morning. Repetitive sleep disruption adversely affects your mood, your home life, work life and your overall health and well-being.

### ***Susceptible species***

An observation by one of Bermuda's professional nature photographers suggests that there has been a reduction in the Island's monarch butterfly population in the Clearwater area. This reduction is suspected to be a result of the increasing number of chickens eating caterpillars. Similarly, pigeons invade the nesting sites of longtails to the detriment of the latter species. These are examples of an indigenous species suffering the impact of an introduced, artificially-sustained species.

### ***No importation of exotic species***

In terms of importation of exotic species of animals as personal pets, the Government is often seen as overly conservative, even repressive. The stance of Government against the importation of exotic species by individuals is a direct result of the fact that people release unwanted pets into the wild. The detrimental consequences of such releases are clearly seen in Bermuda and around the world.

### **Forward Plans**

In 2006, the Department of Environmental Protection examined the costs and

resources needed to tackle feral chickens islandwide. The cost is very high, and in the current economic climate, is economically unfeasible. However, the Department of Environmental Protection is spearheading a less-expensive, cross-Ministry initiative in a coordinated programme. The initiative is a multi-pronged approach and began with eliminating chickens from the Airport arrival area and adjacent parking and dump areas. While there has been success at the airport, the job is not yet complete.



At Clearwater, our efforts are encountering very real obstacles. On many occasions, people sympathetic to the chickens, have freed the birds from the traps, overturned and damaged traps. Alternate modes of operation have been planned in collaboration with non-government organizations.

Other strategies have been considered,

and are not limited to public education and legislative initiatives. Signage has already been posted asking people not to feed feral animals. Initiatives involving the mass media are also on tap. An aspect of new Parks legislation will bring legally enforceable measures into place.



Spay/neuter legislation for cats is under consideration, and the Department is working with farmers to help protect fields from the destructive birds.

The Bermuda Feline Assistance Bureau (BFAB) has agreed to remove cats and the feeding station from the airport grounds. While BFAB is sympathetic to cats, BFAB is also sensitive to the impact of unfettered feeding. It has already moved to control its feeding and made statements condemning the feeding of cats in environmentally sensitive areas, like nature reserves.

*Jonathan Nisbett, DVM  
Veterinary Officer  
Department of Environmental Protection*





## IN THE KITCHEN

### **Cassava Pie**

The Cassava Pie is a traditional Bermudian dish served mainly at Christmas and other very special occasions throughout the year.

#### *For the filling:*

Bring to a boil and simmer until cooked about 5 lbs of chicken with 2 tsp. salt, a sprig or two of thyme and a few stalks of celery.

When cooked allow the chicken to cool. Remove all the skin and bones. Set the meat aside and reserve the broth.

You may prefer to use 3 lbs cooked chicken and 1 lb cooked cubed, lean pork.

#### *For the pie:*

4 lbs cassava

$\frac{3}{4}$  lb. soft butter

2 cups sugar

1 tablespoon salt

12 eggs (beaten)

Optional: 1 teaspoon nutmeg, 1 teaspoon vanilla

Generously grease a deep pan, about 11 x 9 x 4 inches, with shortening. DO NOT USE butter or oil spray as the pie will brown too quickly. Pre-heat oven to 300 °F.

Place cassava in a dish towel and squeeze out as much liquid as possible. Place the cassava in a large bowl.

In another large bowl, cream butter, sugar and salt. Add beaten eggs then cassava. Mix well.

Place half the batter in the pan building it up on the sides.

Place the meat filling to cover the entire middle of the pie and moisten with about  $\frac{3}{4}$  cup of chicken broth poured evenly over it.

Cover with the remaining cassava batter and smooth down making a design with a knife. Bake pie for about 3 hours at 300 °F.

If you notice the pie shrinking from the sides of the pan before the 3 hours the pie is probably cooked. Insert a toothpick. If it comes out clean – the pie is ready to be removed from the oven.

Remove the pie from the oven and cool covered with a damp dish towel and foil. This will keep the crust from becoming hard.

I usually bake my pie on Christmas Eve so that it can be eaten at room temperature on Christmas morning with the baked ham.

The above recipe should be sufficient for a family of four with some leftover for Boxing Day.

*Many thanks to Cecille C. Snaith-Simmons for allowing us to use her Cassava Pie recipe from her Bermuda Cook Book.*



## PLANTING CALENDAR – WHAT TO PLANT IN WINTER...

### December

Beans, Beets, Broccoli, Brussels Sprouts, Cabbage, Carrots, Cauliflower, Celery, Chard, Chives, Kale, Leeks, Lettuce, Mustard Greens, Onions, Potatoes, Radish, Rutabaga, Spinach, Squash, Strawberry, Tomato, Turnip.

### January

Beans, Beets, Broccoli, Brussels Sprouts, Cabbage, Carrots, Cassava, Cauliflower, Celery, Chard, Christophine, Kale, Leeks, Lettuce, Mustard Greens, Potatoes, Radish, Rutabaga, Spinach, Squash, Tomato, Turnip.

### February

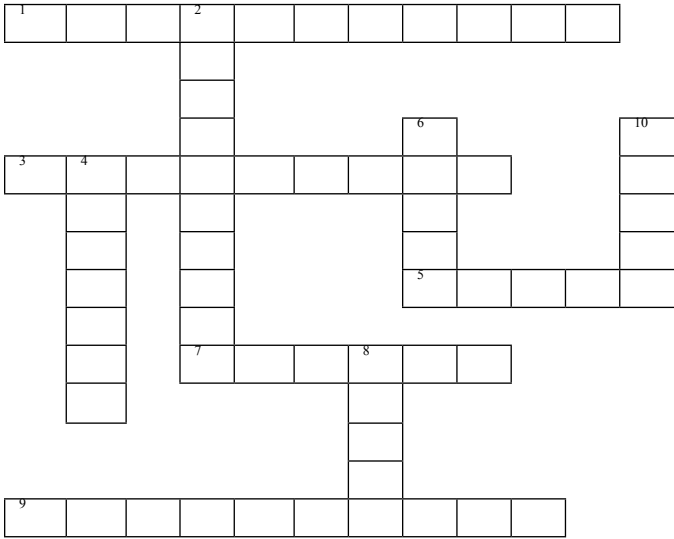
Beans, Beets, Broccoli, Cabbage, Carrots, Cassava, Cauliflower, Celery, Chard, Christophine, Corn, Cucumber, Kale, Leeks, Lettuce, Mustard Greens, Potatoes, Pumpkin, Radish, Rutabaga, Spinach, Squash, Sweet Potato, Tomato, Turnip.

## ANSWERS TO FALL CROSSWORD: ISSUES WITH FISH, WATER AND TRASH!

**Across:** 1) Fishpot, 3) BIOS, 5) Celery, 7) Lenses, 9) Run, 11) Reuse

**Down:** 2) Petroleum fuels, 4) Reduce, 6) Black Grouper, 8) Cinnamon, 10) Recycle, 12) Oceanographic

## ENVIROTALK CROSSWORD #2: POINSETTIAS, BOATS AND...CHICKENS?



**Across:**

1. You can enjoy these festive plants over the holiday season.
3. Derelict boats containing harmful chemicals disturb the growth of \_\_\_\_\_.
5. December though February is a good time to plant this relative to the onion.
7. This spice gives cassava pie a slightly sweet flavor.
9. The \_\_\_\_\_ is very important for poinsettia blooming.

**Down:**

2. Derelict boats are potential hazards to \_\_\_\_\_.
4. Name one of the places besides parks, open spaces and nature reserves you can find feral animals?
6. "Escaped from domestication and returned, partly or wholly, to a wild state."
8. This \_\_\_\_\_ sap can cause skin irritation to some people.
10. \_\_\_\_\_ are planted December though February. They are prepared by boiling and peeling, adding sugar and vinegar makes them edible.

\* Remember the answers to the crossword are found in the articles contained in *this* issue of Envirotalk. Please read the articles before attempting the crossword. Answers will be provided in the next issue.\*

# ON HER MAJESTY'S SERVICE



GOVERNMENT OF BERMUDA  
**Ministry of The Environment and Sports**