



COMMERCIAL SERVICES



Zoo IPM:

Unique Challenges, Creative Solutions

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Your Presenters

- ◆ Frank Meek, B.C.E., Technical Director, Orkin, Inc.
- ◆ Travis Kemper, B.C.E., Orkin Branch Manager,
St. Louis Commercial Branch
- ◆ Les Doyle, Orkin Technician
St. Louis Commercial Branch



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Orkin's Zoo and Aquarium Partners

- ◆ Denver Zoo
- ◆ Knoxville Zoo
- ◆ Louisville Zoo
- ◆ St. Louis Zoo
- ◆ Zoo Atlanta
- ◆ SeaWorld
- ◆ National Aquarium
- ◆ Georgia Aquarium
- ◆ South Carolina Aquarium
- ◆ Clearwater Aquarium



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Pest Management Challenge in Zoos

- ◆ Food, water and shelter readily available
- ◆ Lack of physical pest barriers
- ◆ Must strike a delicate balance: preservation vs. extermination
- ◆ Requires thorough knowledge of zoo's animal collection and special requirements
- ◆ Good communication a must – often multiple curators involved in pest control effort



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Overview: The St. Louis Zoo

- ◆ #1 zoo/animal park in the nation*
- ◆ 3 million visitors per year
- ◆ 11,400 animals, more than 800 species

*Zagat Survey's "U.S. Family Travel Guide."



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Orkin and the St. Louis Zoo

- ◆ Partners since April 2003
- ◆ IPM goal: Minimize pest intrusion while maintaining a safe environment for zoo animals, staff and visitors
- ◆ Orkin technician on-site 2 hours *daily*
- ◆ Technician escorted at all times for safety
- ◆ Communication and documentation critical to success
- ◆ Work with curators of 15 separate animal environments



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St. Louis Zoo's Pest Control Challenges

- ◆ Rodents (esp. mice) and cockroaches most common threat
- ◆ Animal safety the top priority
- ◆ Common IPM options a challenge
 - Exclusion difficult due to age of facility, animal safety
 - Rodent baiting comes with safety issues
- ◆ Pests almost constantly re-introduced



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Insectarium: It's all about access

- ◆ **Problem:** Cockroaches in butterfly exhibit
- ◆ **Solution:** Placed cockroach baits inside 6" PVC pipes; roaches can access, butterflies cannot
- ◆ **Problem:** 40+ ant species found in butterfly exhibit
- ◆ **Solution:** Ant bait stations; ants can access, butterflies cannot
- ◆ **New Problem:** Ghost ants showing aversion to baits
- ◆ **Solution?** Still exploring options



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Primate House: “Like 2-year olds”

- ◆ Smaller primates - lemurs, spider monkeys
- ◆ **Problem:**
 - Rodent infestations
- ◆ **Solution:**
 - Worked with Zoo to secure entry points
 - Primates VERY curious -- placed bait stations out of reach around perimeter of enclosure and in keeper areas
 - Used rodent bait with no secondary kill (proven by lab tests)
 - Achieved good results
- ◆ **Working Together:**
 - Red flag found: broken-off piece of bait found on floor in keeper area
 - Worked with Zoo staff on safe but effective alternatives
 - Now using only snap traps (not most effective option, but totally safe)



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Jungle of the Apes:

- ◆ Apes, orangutans and chimps on display
- ◆ **Problem:**
 - Cockroach infestations
- ◆ **Solution:**
 - Move animals moved out of enclosures, into display environment
 - Bait enclosures, keep animals on display 48-72 hours
 - Zoo cleans enclosures thoroughly before reintroducing animals
 - Safe for animals, outstanding control results



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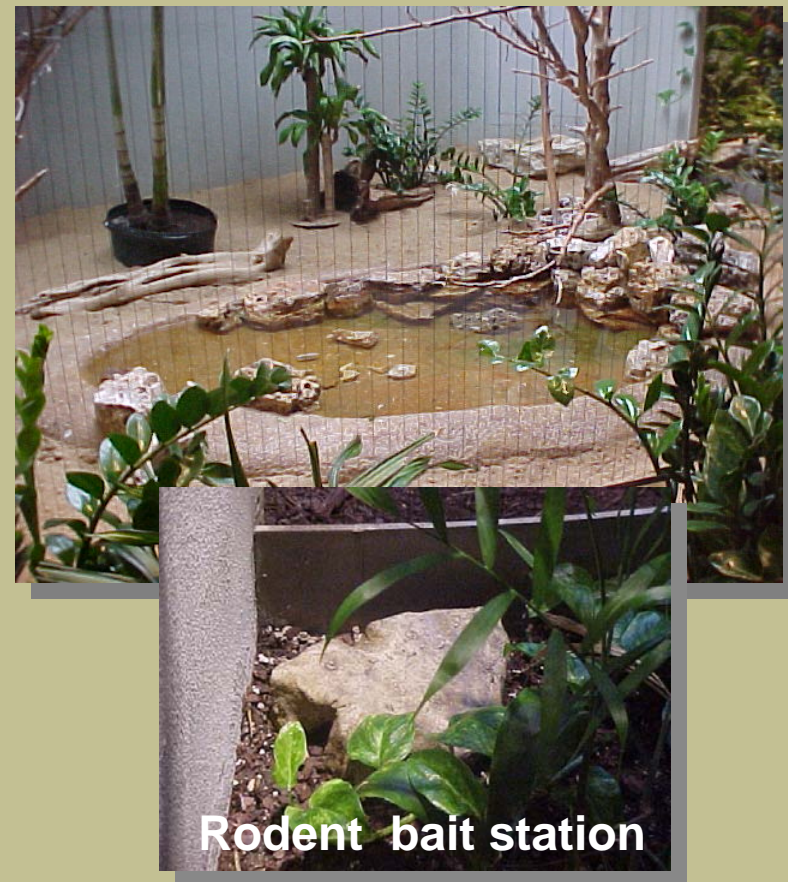
Birdhouse: Mouse control rocks

◆ Problem:

- Mouse infestation in a planter encircling the structure
- Exclusion virtually impossible
- Typical baits would attract attention and possible tampering by visitors

◆ Solution:

- Tamper-resistant bait stations disguised as decorative stones
- “Rocks” made of fiberglass filled with plaster of Paris
- Quelled infestation



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Herpetarium: When geckos don't do the trick....

- ◆ Houses reptiles and snakes
- ◆ Cockroaches never a problem, thanks to gecko control
- ◆ **Problem:**
 - Pharaoh ants
 - Typical treatments not an option because geckos could access them
- ◆ **Solution:**
 - Insect growth regulators (IGRs)
 - Harmless to geckos
 - Control ant reproduction



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Orkin Gold Medal Protection

- ◆ Orkin Commercial Services' most extensive service offering
- ◆ Custom-designed pest management program with comprehensive reporting system
- ◆ Designed to meet strict needs of food processing and health care customers
- ◆ All features of Orkin's regular service plus heavy emphasis on quality assurance and documentation
- ◆ Every Gold Medal account set up and monitored by Orkin Quality Assurance Team (entomologists, sanitarians, food safety experts and commercial and industrial specialists)



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