

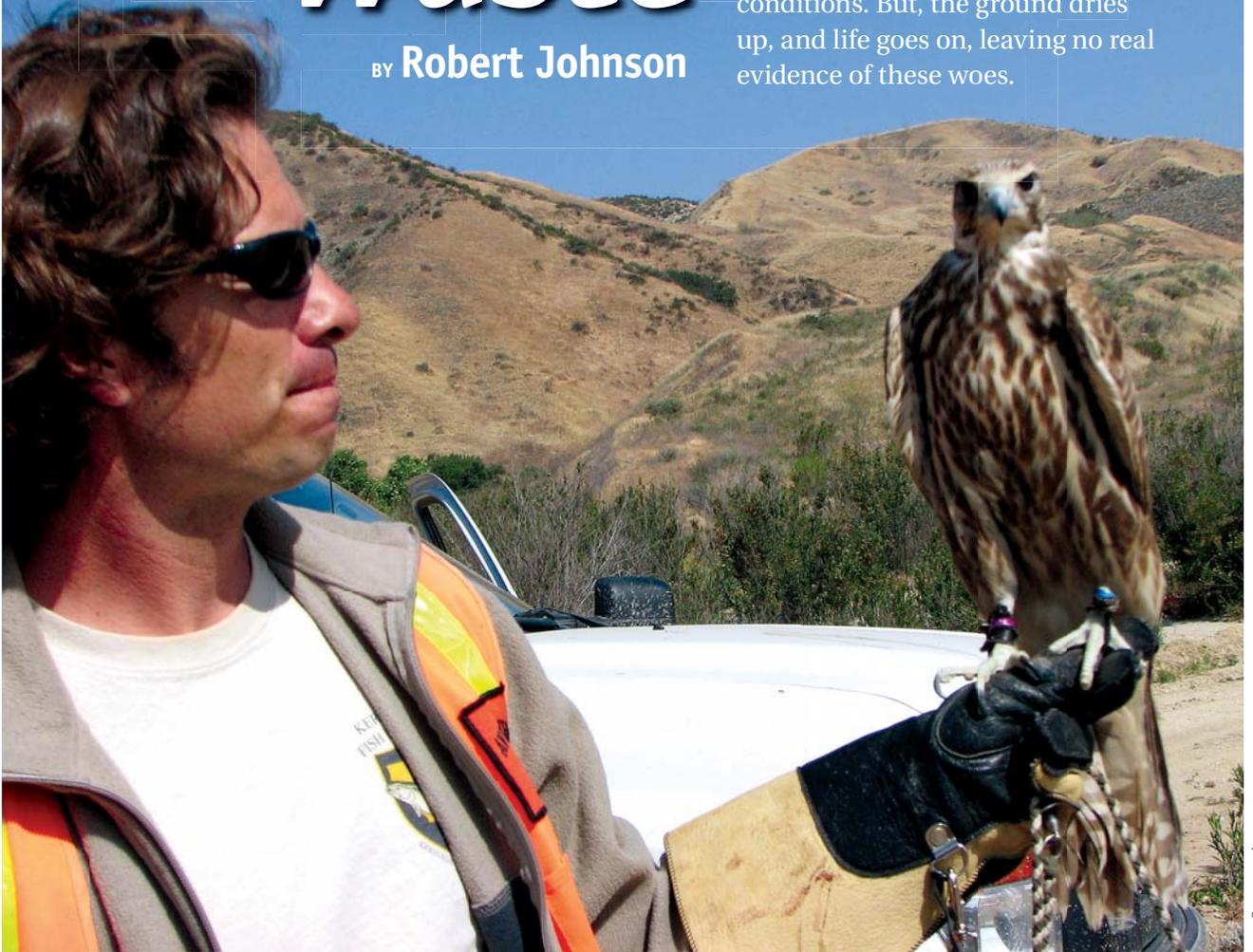
# Wind, Wings and Waste

BY Robert Johnson

## FEATURE

Birds and wind-blown litter can cause major annoyances for landfill operators, but the solutions are out there.

Nature can throw some interesting challenges to landfill operators. Poor weather can make the landfill operations process downright miserable by forcing facility workers to operate heavy equipment and provide customer access in sloppy, muddy conditions. But, the ground dries up, and life goes on, leaving no real evidence of these woes.



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**THE FALCON AND THE TRASHMAN:**  
Some landfills have used falcons to chase away scavenging birds.

But when things start flying around, it is a whole other story. This article will present some suggestions and examples of controls for wind-blown litter

and scavenging birds at municipal solid waste landfills.

This author has managed the operation of several landfills in California that were located in foothill areas near coastal mountain ranges. These sites had their fair share of wind and scavenging birds. One of the landfills was a seven-day-per-week site serving metropolitan Bakersfield. The site could not close and experienced winds frequently reaching 45 miles per hour. Nothing would sink the site personnel's hearts more than driving up the two-mile access road on a Monday morning and seeing litter blown across two square miles of the neighboring cattle ranch. One of the other sites, located in Monterey County, had a bird problem so bad that workers had erected salvaged beach and patio umbrellas over the porta-potties because the birds were "bombing" the workers when they exited the toilet.

The problem with unusually large amounts of blown litter and extreme bird presence is the perception that the site is not being run properly. It has been this author's experience that most regulators will allow a period of time to clean up blown litter after an extreme wind event but will grow impatient if the problem appears to be repetitive.

### Birds of a Feather

Animal controls can be classified in four categories: securing, harassment, relocation and depredation. Securing the site from scavenging birds means following the accepted practices of providing a soil or alternative cover over the refuse at the completion of the day's fill construction activities. With extreme bird populations, this is more easily said than done.

Wildlife will typically be present in areas that have food, water, shelter and space. To secure your landfill site from scavenging birds, you need to remove or minimize access to the food source. With extreme populations this means enforcing covered loads, minimizing the working face during the day and placing cover throughout the day instead of waiting until the final hour of operations.



**FENCED IN:** Portable litter fencing is in use throughout the country to prevent blown landfill litter from being carried off site.



Harassment of birds will lead to their eventual relocation by their own means. When you observe the birds, you'll notice they tend to recognize harassing items and will adjust their presence to avoid the harassment. Harassment can be subtle or active and will have varying degrees of success depending on the target species. Examples of

subtle harassment include reflective tape ribbons and other shiny ground motion devices such as those used in vegetable farms and orchards; helium-filled metallic "evil eye" balloons that represent a predator (such as an owl); decoys in the form of birds of prey; and displayed carcasses (or facsimiles of carcasses) to represent a nearby predator.

Active harassment seems to be the most effective form of bird control. Active harassment can be in the form of objects that injure or interfere with flight; sudden noises, explosions and recordings; pursuit animals; and managed birds of prey. This author's first experience with bird harassment was an 80-pound test monofilament fishing

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## Be prepared to handle nuisances or wait for the phone to ring with complaints.

line placed so that it was about 50 feet above the working face. The monofilament line was not easily spotted by the gulls, and when one would strike it the bird would let out an injured cry, which seemed to deter the other ones from

gathering in the area. This method is practical, assuming high ground exists near the site to make an inexpensive installation. Other interference objects include sprayed aversion chemicals, which either mist or land on the food sources, rendering them inedible to the bird.

The most common form of active harassment is the use of noises and explosions to scare off the birds when they flock in force. The most popular of these is the bird whistler, a .22 caliber starter's pistol that fires a cardboard tube projectile in the air producing a loud whistling noise and explosion. The random use of the tool is effective in controlling gulls and other small flocking birds; however, the whistlers will alarm and surprise some landfill customers, sometimes with some very emotional effects. Operators of some sites with a high percentage of self-haul customers will put up signs advising that bird whistlers are in use at the sites.

A propane cannon is another device used with limited success. Propane cannons charge up before they fire, and birds perching on them will sometimes hop off when the unit fires and

then promptly resettle on their perch. Recordings of distressed birds may also have their application but they often only harass and annoy employees and customers, not the birds.

For many landfills, bird controls are supplemented by the use of managed birds of prey. One large site in Southern California hired a firm that provided trained animals to the movie industry and employed a full-time falconer to actively engage sea birds when they would move inland during the winter storms. The success of the initial program was so striking that the landfill manager decided to keep the falconer on full time throughout the year. Most of the falcons used are larger African and Asian relatives of the peregrine falcon common to North America. Females of the species are predominantly used due to their larger size and aggression toward scavenging birds. Falcons are effective on most scavenging birds but are limited in control of ravens, as ravens will group to resist and sometimes harass the falcon.

The use of pursuit animals is in vogue lately due to bird strikes at airports serving jet-powered aircraft. Border col-

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lies and other herding dogs provide an effective means of harassment to larger scavenging birds. However, the use of these animals in a landfill environment puts them at risk, due to the uneven and potentially dangerous condition of the exposed refuse, and the potential conflict with site traffic and operations equipment.

Depredation, i.e. killing the birds, is the control of last resort. This author has had many long conversations with site supervisors about the intellect of the scavenging birds. Most supervisors thought that the birds followed a leader, or alpha, when they first arrived at the site. One of the superintendents would say, "If you kill the lead one, the rest won't land." This author would respond, "That may be, but you'll definitely scare the customers." In cases with a high percentage of individual self-haul customers, it is best to leave the depredation to non-operating hours. In the desert regions of California where landfills can have a serious raven problem, depredation permits are actively sought by the landfill operators since the usual means of harassment, including birds of prey, have little effect on them.

### Litter on the Track

Litter controls have not changed much over the years. The idea is to prevent blown litter by managing work in wind-protected areas when necessary and providing a combination of physical controls and added personnel when a wind event blows litter off site. Portable litter fencing is in use throughout the country, and variants are in place dependant on type of frame construction, netting and method of moving the units around the site.

Equipment is on the market to allow litter to be collected from fencing with a vacuum, thereby reducing labor costs for litter pickers. One of this author's clients has recently constructed a perimeter litter fence resembling the kind of speed fence you would see at a NASCAR track. This fence was built for permanent litter containment and was placed on a ridge line adjacent to a large active landfill in Southern California. The justification for the cost of a fence of this type is complicated; however, when the cost of added personnel plus the bad neighbor issues come into play, it may seem like a bargain, especially if yours is a landfill site

in the process of an expansion permit application. On the site management side, being conspicuous and timely in response to a windblown litter event will pay off in reduced violations and fines from regulators.

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### Secret of Success

The secret to success in bird management is to occasionally change your pattern of passive and active harassment techniques. The animals will develop a habit of avoidance, but until the food source is gone they will always come back. Litter management means being consistent, willing to invest in physical control measures, and being conspicuous and committed when cleaning up the occasional major event. In conclusion, be prepared or wait for the phone to ring with complaints. ■

A former chief engineer and general manager for landfill operations in central California, Robert Johnson is professional civil engineer and a senior project advisor for SCS Engineers and based in the firm's Rancho Cucamonga, Calif., office.

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