# TrapSmart™ Improves Flight and Raptor Safety at Vancouver International Airport

by Gary Searing, Airport Wildlife Management International Inc.

When US Airways Flight 1549 landed in the Hudson River after striking a flock of Canada Geese in January 2009, the world became aware of the unfortunate result of birds and airplanes occupying the same airspace. Referred to as the "Miracle on the Hudson," all 155 occupants safely evacuated the plane and the entire crew was acknowledged for its heroic feat.

Vancouver International Airport (YVR) is uniquely situated on Sea Island, in Richmond, British Columbia, where the Fraser River meets the Pacific Ocean's Strait of Georgia. This coastal, urban area is also a major stopover for migratory bird populations on the Pacific Flyway. As a result, Vancouver Airport Authority operates a comprehensive wildlife management program to prevent bird strikes. YVR provides attractive habitat for eagles, hawks and falcons (raptors). As a result, significant numbers of resident, wintering and transient raptors are present at the airport.

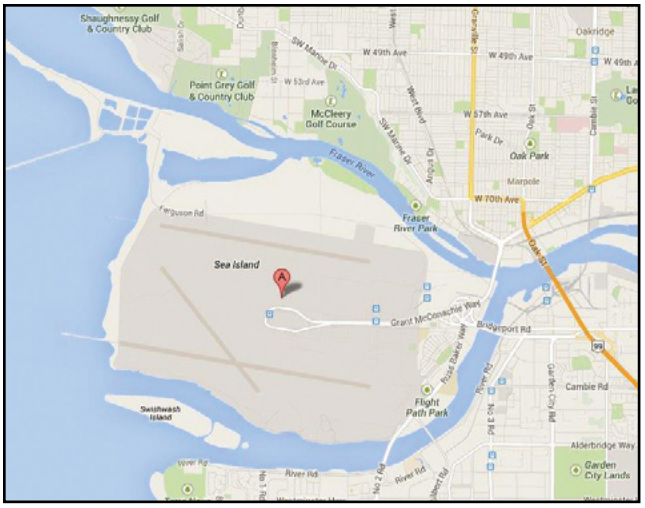
As a Wildlife Hazard to Aircraft Biologist, I began a program to reduce the number of raptors being struck by aircraft. The benefits of this program would be twofold: improve airline safety and conserve the raptor population. One species, Barn Owls, is a species at risk in Canada.

Based on information from SeaTac International Airport in Washington, resident adult Red-tailed Hawks are less likely to be involved in collisions with aircraft than young and transient birds. That knowledge directed me to focus on removing young and transient birds from the airport environs by capturing and releasing them to suitable habitat 100 km away to reduce the likelihood of them returning to YVR. This is not only an air safety program, but it is also a raptor conservation program because although few airplane-bird strikes result in risk of an accident almost all of them result in a dead bird. If we are successful, we may prevent the deaths of a dozen or more birds each year as well as some potentially significant aircraft incidents.

**Gary holding C7 after removing it from the trap.**

With these two goals in mind, I needed to be able to trap 24-7 to catch not only Red-tailed Hawks, but also Barn Owls. I settled on using Swedish Goshawk traps as my full-time trap as well as balchatri traps and bow nets. However, with the unattended traps (Swedish Goshawk traps and bow net) I needed to know right away when I caught a hawk or owl in the trap to minimize the stress on the bird in the trap and reduce any potential for trap mortality. While there are a number of options, I was immediately drawn to the TrapSmart monitoring system. This wireless, real time electronic trap monitoring system gives me and my team of raptor biologists an alert as soon as the trap closed. Then, the wildlife control staff go to the trap and cover it to settle the bird and protect it from inclement weather. We then have time to get to the airport and remove the bird for banding, tagging and relocation. Once the bird is removed from the trap, the trap is reset and able to support multiple captures in a day.

The TrapSmart system is a key element in the raptor trapping program at YVR. With real time alerts via text and email to several people on the team, birds in the trap are dealt with promptly because the alert lets our team know exactly which trap closed. Then the first available biologist on the team is dispatched to the airport to handle




**Map of Vancouver International Airport.**

the bird. Alerts include trap activity, low battery and connection status so everyone knows when a trap is closed and when the battery needs to be replaced. TrapSmart was able to make an adjustment to accommodate a solar panel to extend the charge of the battery so there is much less maintenance needed.

While the program started almost exclusively moving Red-tailed Hawks and Rough-legged Hawks from the airport, last fall the program was expanded to all raptors, including owls. To date, we have captured, tagged and relocated more than 140 birds. Most of them were relocated to the upper Fraser Valley which provides a good environment and is far enough to discourage birds from returning. I am wing-tagging Red-tailed Hawks to find out which birds are YVR residents. This is part of a co-operative Red-Tailed Hawk tagging program with SeaTac and Portland International airports. Each airport has its own color tags to identify where the bird was initially tagged. The program is not only contributing to air safety, but is providing a great deal of information about resident, wintering and transient raptors.

To date, YVR has captured 83 Red-tailed Hawks, mostly hatch year or second year birds. Less than 20% of the very hazardous juvenile birds have returned. Four YVR birds have been seen in Washington State and three birds from Washington State came to YVR. In addition, YVR has captured seven Rough-legged Hawks of which only one returned, two Snowy Owls (one returned), 28 Barn Owls (one returned), three American Kestrels (one returned), and seven Great Horned Owls, two Peregrine Falcons, five Coopers Hawks and one Merlin -- none of which have returned to YVR.

Raptors are one of the major strike risks at YVR and the one group of birds that do not respond well to harassment to prevent strikes with aircraft. The capture-and-relocation program in place is helpful in mitigating that risk. As well, thanks to collaboration, information-sharing and the efficient TrapSmart system, we are able to collect essential data on bird movements and distribution, and see precisely how well our wildlife management techniques are working at YVR. ■

*About Gary Searing*

*Gary is the founder of Airport Wildlife Management International Inc. (AWMI). Based in Canada, his company specializes in the development and implementation of airport wildlife management programs around the world. It specializes in wildlife management program design, analysis and reporting, auditing and enhancement of existing programs, and personnel training. AWMI has been involved in addressing wildlife issues at airports for more than 20 years. His company's expertise has been implemented at airports throughout North America, the Caribbean, Europe and Asia.*

**Swedish Goshawk Trap equipped with TrapSmart system and solar charger.**