



**Hacking Runs Gamut of Perigrine Perils**

## By Jonathan B. Jarvis

Planning for the 1983 manipulation of the endangered peregrine falcons at Crater Lake NP began much as it had in the previous two years, (*Park Science* Vol. 2, No. 4). A cooperative effort by the Park, the Oregon Department of Fish and Wildlife (ODFW), and the Predatory Bird Research Group (PBRG) of Santa Cruz, Calif., established a site observer in March at a station near the historic aerie.

Anticipating the return of the nesting pair of peregrines, plans were made to replace the eggs with fledglings as had been done the past two years. Logistical support for the site observer, Randy Wilson, was only slightly hampered by a record snow accumulation of 21 feet.

The first bird to arrive at the aerie was a male, identified from markings as the nesting male of past years. For 30 days he waited from the vicinity of the ledge. In late April, a female peregrine arrived, but the color markings and a leg band indicated she was not the nesting female of past years. She was at least a

two-year-old adult, and quite possibly one of the two females fledged at the aerie in 1981. Since the nesting female of past years was thought to be an older bird, her failure to return was interpreted as indicating she had not survived the winter migration.

## Disaster Strikes

Park staff spirits soared as courtship and prey exchanges were observed between the male and the new female. However, after just one week of courtship, disaster struck. The male failed to return from a hunting trip, presumably having fallen prey to accidental death or to intentional shooting by man.

For days the female wailed from the ledge, calling for her mate to bring food. Seven days after the male had disappeared, a new peregrine, thought to be an immature (one-year-old) male, arrived at the aerie. The female and this new immature began interaction and bonding behavior.

Soon thereafter, an egg was laid on the ledge, but since no copulation had been observed, the egg was thought to be unfertilized—probably laid as the result of the intense courtship activity. This conclusion was verified by the lack of interest and incubation by the female as she intensified the courtship and bonding with the immature male.

While the bonding raised new hopes for a viable nesting pair next year, hopes for a 1983 success were dashed. The immature male and the mature female would not be capable of producing a successful nesting this year.

## Alternatives Considered

Park and ODFW personnel met to determine the alternatives for saving Oregon's only known peregrine nest. Wilson reported he had now seen a total of three banded peregrines in the aerie vicinity; an adult female, an immature female, and an immature male. This indicated that the previous years' manipulations were at least a 75 percent success, with the return of three out of four birds.

It was noted that with the loss of the adult male, the Park had a cumulative shortage of male peregrines for future nestings. The best alternative suggested was a "hacking" operation—a falconer's term for the imprinting and releasing of birds into an area. With this procedure, the Park population could be augmented with young male birds.

The aerie operation thus far had expended most of the Park's programmed funding for the peregrines, so to support the hacking operation, Park staff turned to the private sector. Proposals to Weyerhaeuser Company and to Recreational Equipment, Inc. produced \$500.00 for helicopter support and \$550.00 of camping equipment respectively. ODFW and the Park pooled money to purchase the peregrines from the PBRG in Santa Cruz and Park staff organized to provide logistical support to a remote location.

With the assistance of a USFS helicopter a "hack" site was located that provided reasonable accessibility, freedom from predators and distance from the historic aerie to prevent territorial conflicts with the returning immatures. The area was surveyed for the presence of great horned owls, a natural threat to peregrines, and found to be free.

## Hack Box Flown In

On June 30, a 4' x 4' x 6' hack box was flown to the site and cabled to a ledge within the Crater Lake

caldera. Three days later, two male and one female peregrines were flown from California to Chiloquin, Oregon. They were then driven to a heliport on the Park boundary and flown via helicopter to the site. Placed in the cage-fronted "hack" box, the three birds got their first breathtaking view from 1,000 feet above the Lake surface.

On the cliff edge 500 feet above the hack box, a camp was set up for hack site observer Randy Wilson. Wilson's duties included observing and recording the peregrines' progress, as well as scrambling down a skree slope before dawn each morning to provide the peregrines with a daily quotient of three quail each.

The quail, provided by ODFW, were cleaned and frozen and proved to be a major logistical problem of the operation. To prevent spoilage in the remote location, Wilson could store only a week's supply by burying a cooler in the snow. By the end of the "hacking," the peregrines had eaten over 400 quail!

One week after the peregrines were placed in the hack box, they were banded, fitted with leg mounted radio transmitters and released to the ledge. On July 11, all three tested their wings with the first flight. Until they developed their aerobatic skills, they were now the most vulnerable to predation by golden eagles and great horned owls. Only one day after release, Wilson observed an immature golden eagle attempt to catch the female peregrine.

## Stress Produces Lethargy

Although the eagle attack was unsuccessful, its stress effect on the female was enough to produce lethargy, making the bird increasingly vulnerable to any repeat attempt by the eagle. For several days, Wilson and an assistant were able to fend off the eagle by shouting and rapid movements as it approached, but the eagle became increasingly accustomed to their actions and it was feared the female would be lost.

Acting on advice from the PBRG, Park rangers set up a vigil over the hack site, armed with blank-loaded shotguns that would fire a loud noise to frighten the eagle. Fortunately, the two male peregrines developed their flying skills rapidly and eventually chased the eagle away.

Though flying well, the peregrines still were entirely dependent on the daily quotient of quail. Therefore, Park staff was concerned when the quail began disappearing soon after they were left on the ledge. A live trap brought to the ledge caught an immature pine marten the first night. It was transported 15 miles away to another area of the Park and released. The problem was not solved until three more pine martens were live trapped from the ledge and transported to other parts of the Park for release.

During the remainder of the operation, the peregrines ranged further each day from the security of the hack site. Reports came in of them being seen many miles from the ledge as they explored their new territory. In mid-August, they began returning with full crops and showed less interest in the provided quail.

Finally, on August 29, the park closed the hack site and discontinued feeding, confident that the three could fend for themselves. With luck, they will return in coming years to reestablish Oregon's only known nesting pair of these magnificent birds.

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