

Threats Posed by Rock-Climbers to Birds Nesting on Cliffs in the South Okanagan

Howard Richardson

Biology Department, Okanagan University College
583 Duncan Avenue West, Penticton, BC, V2A 8E1, Canada
howie@vip.net

ABSTRACT

An explosive growth in the sport of rock-climbing has brought previously isolated, cliff-dwelling species into close contact with humans. Skaha Bluffs in the South Okanagan Valley, B.C. is now a major rock-climbing destination and home to at least 13 Red- and Blue-listed species. Of these, by far the most visible is the white-throated swift (*Aeronautes saxitalis*). Peak use of this area by both swifts and climbers is April to September. Most of the swifts' nests are on cliffs little used by climbers, who also prefer to climb on open faces rather than the cracks frequented by swifts. There was no detectable difference in the proportion of successful nests on cliffs used by climbers compared to unused cliffs. Nor was there any decrease over the course of the study in the total number of nesting swifts in Skaha Bluffs, or a move from cliffs popular with climbers to unvisited ones. Canyon wrens (*Catherpes mexicanus*) seem equally unaffected by the surrounding clamour. The swift population is larger than previously determined, scattered over a large number of cliffs in the Okanagan. About 10% of the valley's nesting swifts are found in Skaha Bluffs. The same happy state of affairs may well not exist for other threatened species in the area. Climbers need to be involved in, and more aware of, potential problems and their resolution if climbing is to be a perennial part of the local, recreational scene.

Key words: *Aeronautes saxitalis*, canyon wren, *Catherpes mexicanus*, Okanagan, rock-climbing, white-throated swift.

The first rock-climbs in British Columbia were done in the early 1950s, but for most of the next 30 years this was a sport practised by few and with little ecological impact. In the mid-1980s, 2 innovations impelled rock-climbing from a backwater activity into the mainstream. The first was the indoor climbing gym, where people could climb all year, and which provided an easy avenue of entry into the sport. The second innovation was the battery-powered hammer-drill. This allowed belays, or safety anchors, to be placed in blank walls in a matter of seconds. Hitherto, climbs had followed cracks into which protective devices could be placed, or had required a lot of time and effort to hand-drill holes for anchors to safeguard the blank sections. The 2 factors have worked synergistically, with ever more climbers looking for places to climb and using cliffs previously thought to be dangerously unprotectable.

This burgeoning web of climbing has engendered numerous repercussions on the grounds of aesthetics, access, and liability (e.g., McCarty 1993). Conservation issues have been slower to develop, perhaps because rock walls were traditionally seen as sterile, inaccessible, and ecologically

uninteresting (but see Nuzzo 1995, Kelly and Larson 1997, Camp and Knight 1998). In Britain, where there is a high density of both climbers and naturalists, the avenues for dealing with conservation problems are well established. Climbers and conservation groups consult over possible cliff closures and the results are published in climbing magazines (Anon 1998). In North America such problems are dealt with on a more ad hoc basis.

The spread of rock-climbing and its potential impacts are nowhere more problematic than in the South Okanagan. In the past 10 years, Skaha Bluffs, just outside Penticton, has become the second most-popular climbing area in British Columbia. This within an area of Canada that is ecologically unique and already beleaguered by immigration, development, agriculture, and other recreational activities. Cliff faces, which for the most part had been undisturbed since they were uncovered at the end of the last ice age, are now visited on a frequent and regular basis. Eighteen of the South Okanagan's Red- and Blue-listed species are known to need cliffs or talus as an essential component of their habitat. Thirteen of these have been found in the climbing area.

Climbers, government agencies, and other concerned parties have made numerous attempts to broker agreements to minimize the impacts of climbers at Skaha Bluffs. Such

attempts usually founder on lack of information about the species of concern. The aims of this study were: a) to determine the basic activity patterns within Skaha Bluffs of both climbers and white-throated swifts (*Aeronautes saxitalis*); b) to assess the impacts of climbers on the swifts' breeding success; and c) to evaluate the importance of Skaha Bluffs to the swifts on a valley-wide scale. The white-throated swift is known to breed at Skaha Bluffs and, with only 200 breeding pairs in Canada, is Blue-listed (Summers 1995). It and the canyon wren (*Catherpes mexicanus*) are the most visible and probably the most common of the listed bird species found in the area.

STUDY AREA

Skaha Bluffs consists of about 45 separate rock outcrops scattered through 100 ha of ridges and canyons on the eastern outskirts of Penticton. Another 90 cliffs throughout the Okanagan, from Kelowna to the United States border, were visited to confirm the overall distribution and numbers of swifts in the area.

METHODS

The data were collected between late March and early November of 1995–98. More than 100 visits, lasting 4–16 hr, were made in each of the 4 years.

ACTIVITIES OF SWIFTS

Gaining access to swifts' nests is notoriously difficult. I managed to get to, and look into, 4 nest sites, and did so in each of the 4 years of the study. Visits were made about every 3 days; within this observation schedule, laying and hatching dates were more narrowly defined by assuming a 2-day interval between laying of successive eggs and synchronous hatching (Lack and Lack 1951, Baldwin and Zaczowski 1963). The noisy and highly-visible copulation flights were assumed to be coincidental with laying and so were also used to determine the temporal distribution of clutch initiations.

In 1998 the activities of swifts were monitored by weekly visits to 79 nests on 14 cliffs. Approximately half of these nests were those in the Skaha Bluffs. The rest were on 3 cliffs near Skaha and Vaseux lakes chosen simply for their accessibility (UTM [universal transverse mercator] references: E 3123, N 54701; E 3139, N 54766; E 3163, N 54637). This provided a mix of cliffs used by climbers moderately, infrequently, and not at all. None of the cliffs most heavily used by climbers had swifts nesting on them.

When the loud begging calls of the young are no longer audible they have either fledged, been abandoned, or have died. Young were assumed to have fledged if all of the following conditions applied: a) adults visited the nest in all 3 of the weeks prior to the presumed fledging; b) the adults

visited more than once an hour in those 3 weeks; and c) the young begged strongly at each visit.

ACTIVITIES OF CLIMBERS

Details of the date of first ascent, location, grade, and general description of climbs came from the appropriate guidebooks to the area (Knight 1996, McLane 1995, Richardson 1997). The number of climbers visiting Skaha Bluffs was determined by counting cars in the car park and their occupants as they arrived.

Throughout 1996 I kept a tally of all the climbs where I saw people attempting an ascent. Because it was not possible to visit all the cliffs with equal frequency, popularity of a climb was expressed as number of ascents per observation-visit. Some cliffs are larger and have many more routes than others. Cliff popularity was expressed as number of ascents per total number of climbs on the cliff per observation-visit. Hence, a large cliff with 35 climbs would not be registered as being as popular as a cliff with few climbs, if they received equal numbers of ascents.

RESULTS

ACTIVITIES OF SWIFTS

Although white-throated swifts arrive in the Okanagan in late March, they do not start breeding until early May. A total of 109 copulations were recorded between the first week in May and the first week in July, with the peak in the second week of June (Fig. 1). Of the 79 regularly visited nests, only 59 were successful. The young fledged between the last week in July and the first week in September, with most fledging in the second week of August (Fig. 1). Most birds left the valley by mid-September. The duration of incubation and brooding, from direct observation of the 4 accessible nests, was 23

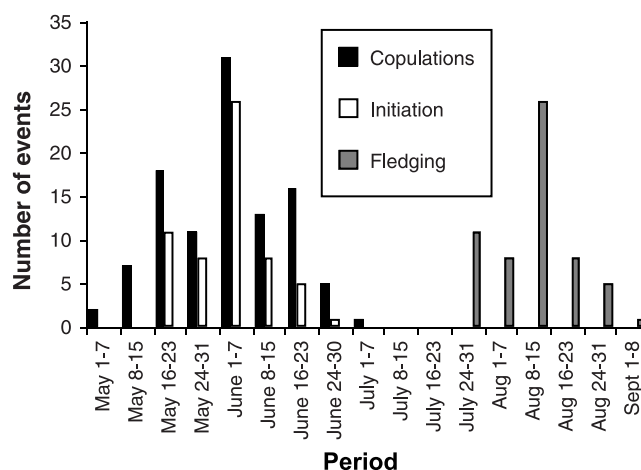


Figure 1. Breeding chronology of white-throated swifts at Skaha Bluffs.

days and 42 days, respectively. These durations are consistent with other swift species of similar size (Cramp 1985, Marin 1997). This suggests the 59 successful nests were initiated between early May and mid-June (Fig. 1), a period coinciding with that of copulation activity.

My observations in the summer of 1998, combined with previous surveys (Summers 1995), suggest a valley-wide white-throated swift population of around 750 birds, of which 68 (9.1%) were at Skaha Bluffs. In all, swifts were seen at 79 of the 135 cliffs visited.

ACTIVITIES OF CLIMBERS

Both the number of cliffs in British Columbia used by climbers and the number of climbs on them have grown exponentially since the 1950s. There were recorded climbs on only 9 cliffs in the 1950s, but that number had reached 190 by the mid-1990s. Of particular note is that much of the development since 1985 has been in the Okanagan (Fig. 2).

In 1996 approximately 4,800 cars, with an average of 2.5 occupants per car, used the climbers' car park, giving roughly 12,000 climber-days spent at Skaha Bluffs. A variety of casual observations, such as the number of parking passes purchased, suggest visitation is growing by about 10% per year, so there may have been as many as 15,000 visits in 1998. Although there could be a few visitors on a sunny day even in the middle of winter, the period of consistent use (April to September) and heavy use (April and May) coincides almost exactly with the swifts' breeding season. On the busiest day there were 120 cars in the parking lot!

One of the common misconceptions of non-climbers is that once a climb is described in the guidebook it will then

be climbed repeatedly. But such is not the case. Climbers show distinct preferences, resulting in some climbs and cliffs being heavily used while others may rarely be visited. During the summer of 1996 I never saw climbers at 15 (33%) of the 45 cliffs on which, at that time, there were recorded climbs. Only 12 of the 45 (27%) had climbers on them for more than 1 of every 10 visits. By contrast there was at least 1 climber present on 88 of 100 visits to the 2 most popular cliffs. None of the 4 most-heavily used cliffs had swifts nesting on them. Of the 11 cliffs with swifts' nests, 3 are never climbed, 4 receive few visits, and 4 were ascended with moderate frequency. The most popular (no nests), moderately popular, and infrequently visited cliffs had levels of use of >0.1, 0.05–0.3, and <0.02 ascents per climb per visit, respectively.

What was the basis for climber preference? They liked climbs with fixed protection anchors rather than ones where they had to ascend cracks and place their own protection. A total of 585 climbs were listed in the guidebook, of which 275 (47%) had fixed protection, compared with 989 observed ascents, of which 574 (58%) were of fixed climbs ($\chi^2 = 48.4$, $P < 0.001$). They also preferred climbs graded between 5.8 and 5.10 (Fig. 3), and only 2 of the climbs with swift nests on or near them were in that grade range. There was a weak negative correlation between cliff popularity and distance from the car park (cliff popularity [ascents/climb/visit] = $-1.1 \cdot 10^{-5} \times \text{distance}[\text{m}] + 0.04$; $r^2 = 0.04$). Much of this correlation is due to the 4 most popular cliffs, all of which are heavily used for teaching and by novice climbers. If these 4 cliffs are ignored, it seems that more experienced climbers are interested in some other quality of a climb than simply how far they must walk to reach it ($r^2 = 0.0001$).

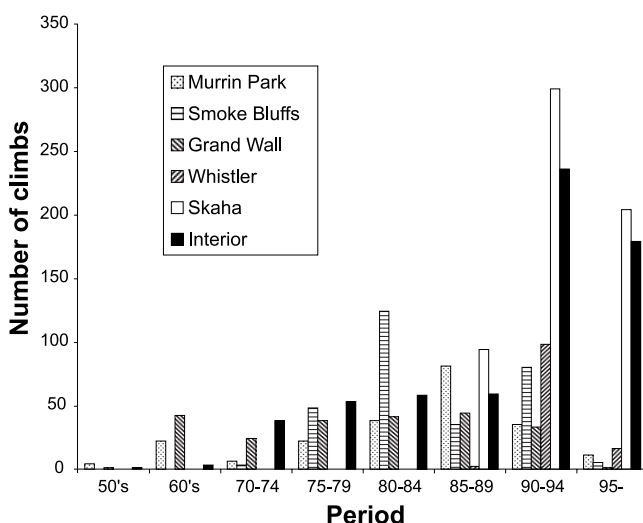


Figure 2. The number of new climbs recorded in 5-year periods in different areas of British Columbia.

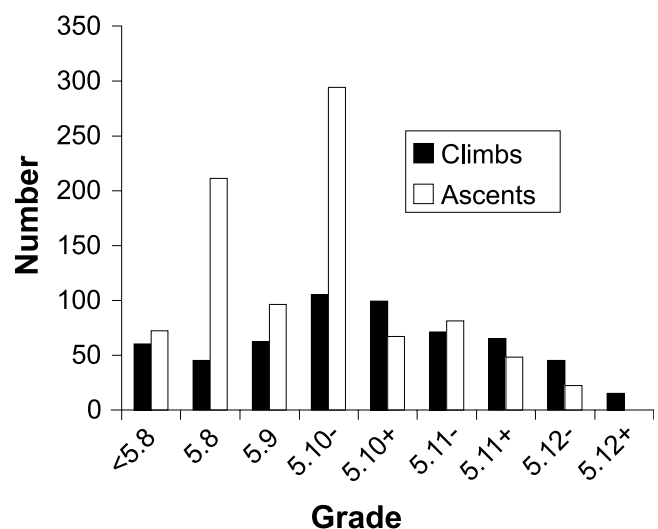


Figure 3. Frequency distribution of climbs of different grade and of actual ascents of climbs in those grades.

DO CLIMBERS AFFECT BREEDING SWIFTS?

The data allow 3 possible assessments of whether climbers had a negative impact on the breeding of white-throated swifts. The first was a comparison, for 1998, of the proportion of successful versus unsuccessful nests on 3 groups of cliffs: a) those outside the climbing area; b) cliffs in Skaha Bluffs that had climbs on them; and c) those that did not have climbs on them (Fig. 4). Although there were differences ($\chi^2 = 0.82$, $P = 0.38$) between the groups, the trend was contrary to expectations, with the cliffs in Skaha Bluffs with no climbs on them having the lowest proportion of successful nests. Secondly, there was no significant shift ($\chi^2 = 5.61$, $P = 0.47$) over the duration of the study of nesting activity from the most popular cliffs to those less frequently visited by climbers (Fig. 5). The third possible line of evidence for a minimal disturbance of these birds by climbers is that the overall number of swift nests in Skaha Bluffs has not declined over the 4 years of the study with, sequentially, 30, 32, 30, and 38 nests.

DISCUSSION

For conservationists there is good news and there is bad news. The good news is obviously that white-throated swifts do not seem to be impacted by this sudden incursion of climbers into their breeding habitat. This is most likely due to the separation of climbers onto the open faces and birds into the cracks, but also because swifts are known to be unconcerned by human activity close to their nests (Lack and Lack 1951). Also reassuring is the fact that climbers currently

interact with less than 10% of the valley's swift population, and that the population is either growing or larger than previously estimated. Coincident observations of canyon wrens suggests they are similarly unperplexed by the flurry of human activity around them.

The bad news is that the number of climbs and climbers is still increasing. Ten years ago most climbers dismissed the Okanagan as having too little solid, climbable rock to be worth a visit. The survey undertaken in this study revealed numerous climber-friendly cliffs that have, as yet, escaped notice. With more and more climbers moving to the area specifically for the climbing, this situation will not continue.

The second item of bad news is that whatever can be said about the ability of swifts, wrens, and climbers to coexist cannot be extrapolated to any of the other species of concern. Snakes, bats, sheep, and raptorial birds present a completely different complex of interactions.

Climbers have historically viewed their activities as environmentally benign. This view has to be called into question given the escalating geographical scope of the sport recorded here, and the presence on a long weekend of up to 300 visitors in such a small area as Skaha Bluffs. But for this and other sites on Crown land, it is nearly impossible to implement either legislated or voluntary restrictions of human, recreational activity merely on the suspicion that it is detrimental. Such restrictions are only palatable under 2 conditions: that the potential damages are rationally and realistically presented; and that any restrictions can be seen to be part of an overall plan. Climbers have seen restrictions of their activity as unfair when 5 km down the valley a similar, and probably equally essential, piece of habitat is mutilated for a housing development.

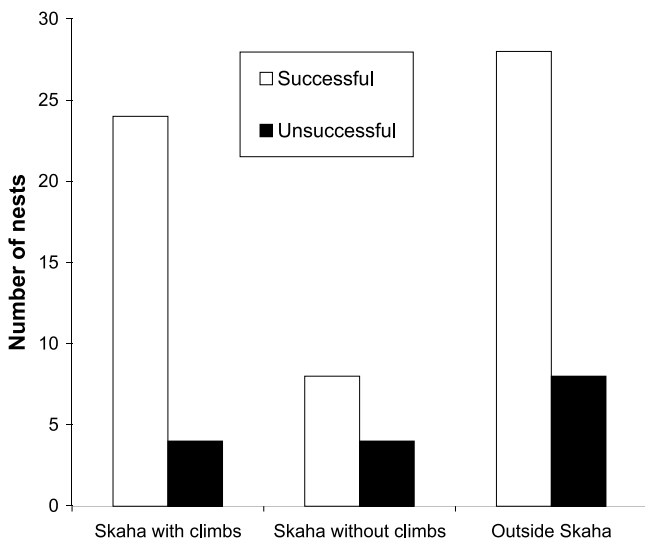


Figure 4. The number of successful and unsuccessful nests on cliffs in Skaha Bluffs with climbs, without climbs, and on cliffs outside the climbing area.

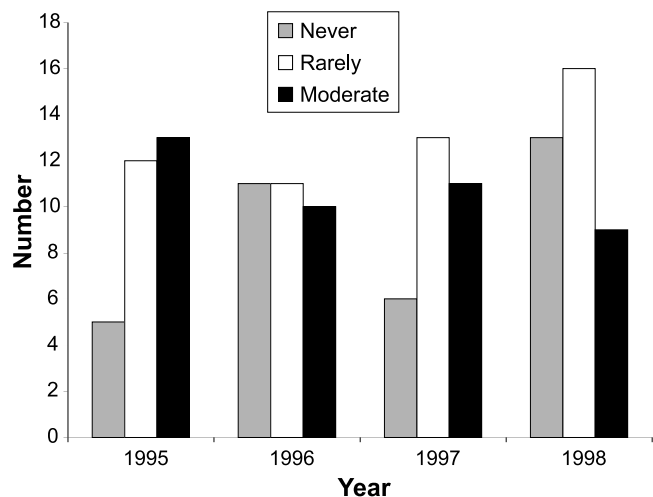


Figure 5. The number of swifts' nests per year on cliffs visited by climbers never, rarely, or with moderate frequency.

Acquiring information and formulating management plans requires time and money. The relevant government agencies do not have enough of either. If climbers want to continue pursuing their passion in the Okanagan they must become more aware, more involved, and more willing to accept restrictions. I have been a climber for 40 years; I would hate to have to stop now.

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