

STATUS AND DISTRIBUTION OF THE MERLIN
IN SELECTED AREAS OF IDAHO



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INTRODUCTION

The merlin (Falco columbarius) is a small, uncommon falcon whose nesting distribution extends over much of Canada, Alaska, and the northern United States. Since 1971 it has been on the Blue List, a list of species whose populations have shown serious or potentially serious declines (Evans 1982). Three distinct subspecies have been identified (Temple 1972). The taiga merlin (F. c. columbarius) and the Richardson's merlin (F. c. richardsonii) are both considered to be Status Undetermined by the U.S. Fish and Wildlife Service since 1973 and Canada has listed the Richardson's merlin as Endangered (Evans 1982) although more recent publications question whether this status is warranted (Oliphant 1985). The Idaho Department of Fish and Game and the Bureau of Land Management in Idaho have listed the merlin as a "Species of Special Concern" and "Sensitive Species", respectively, because of lack of knowledge about the birds' population density.

The black merlin or western coastal merlin (F. c. suckleyi) is the darkest of the three subspecies with the adult male having a nearly black dorsum. The bird is known to breed in the humid forest regions of the Pacific Coast and offshore islands (Figure 1). Although principally a resident species, some birds have been reported to range throughout the western United States and to southern California and New Mexico during the fall and winter.

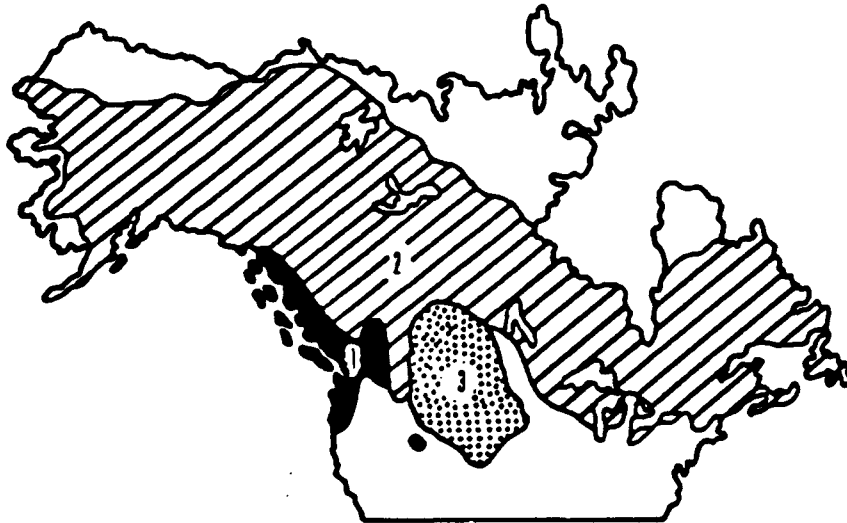


Figure 1. Breeding ranges of the North American Merlins. 1) black or coastal forest (F. c. suckleyi); 2) taiga (F. c. columbarius); 3) Richardson's (F. c. richardsonii) (After Temple 1972).

The Richardson's merlin is a locally common breeder of the northern Great Plains. It is found in prairie-parkland habitat and is the lightest of the three subspecies. Although some Richardson's merlins remain on their breeding ranges in the winter, particularly in cities and around feedlots where small birds are numerous, others migrate south to northern Mexico, east to Minnesota and south along the western coast (Clark and Wheeler 1987, Evans 1982). The taiga merlin nests in the boreal forests of Alaska, Canada and the northern United States. It can be highly migratory and winters in Canada, the western U.S., along the eastern and Gulf coast areas and as far south as Peru (Clark and Wheeler 1987, Evans 1982).

To the inexperienced observer, the merlin can be easily confused with the American kestrel (Falco sparverius) which it resembles in size, shape and habitat preference. The merlin, however, is slightly larger, has a distinctly banded tail and lacks the facial markings of the American kestrel. Merlins are also easily confused with the sharp-shinned hawk (Accipiter striatus). However, unlike the sharp-shinned hawk, the bands on the tail of a merlin are unequal in width with the light bands being much narrower than the dark bands. The merlin has long, pointed wings and a rapid, direct flight, whereas the accipiters have shorter, more rounded wings and characteristically intersperse flapping with gliding.

Merlins of all subspecies feed primarily on small birds, rarely take mammals (with the exception of bats) and prefer open

country for hunting (Call 1978). During the summer and fall insects may form part of the diet, particularly for young birds still inexperienced in hunting. Like other raptors in the genus Falco, merlins usually do not build nests but appropriate old stick nests of other birds such as corvids or raptors. Merlins rarely use the same nest more than once, although they often use the same nesting area in consecutive years and have been recorded to use the same ground scrape for as long as 23 years (S.A. Temple pers. comm. in Evans 1982). Those birds that inhabit prairie-parkland habitats (F. c. richardsonii) are often found nesting in juniper tree (Juniperus spp.) patches or deciduous trees along wooded streams or rivers, old shelter belts, around abandoned home sites and in isolated groves of trees (Trimble 1975). The key factor for determining the nest site appears to be the type of nest available rather than the species of tree in which the nest is built (Call 1978). Birds of the boreal forest usually nest near clearings, rivers or lakes (Trimble 1975). Very few nests of the black merlin have been described in the literature; however, it is thought that their general nesting habitat requirements are similar to those of the taiga merlin.

The Richardson's merlin has suffered severe declines in population numbers over parts of its range. These declines are thought to be due to agricultural practices in the Great Plains. Chemicals once used in agricultural areas such as DDT and persistent organochlorine pesticides cause eggshell thinning (Becker and Sieg 1987), aberrant reproductive behavior of adults,

and embryonic mortality in raptors (Newton 1979). The Richardson's merlin has been reported to be particularly influenced by toxicants because they inhabit farming areas (Evans 1982). In addition, increased agricultural land use has led to destruction of nesting sites and prey habitat (Trimble 1975). However, this subspecies is thought to be shifting its range somewhat in order to compensate for the loss of habitat in the Great Plains (Trimble 1975, Sailer 1987). Fortunately, recent surveys of Richardson's merlin numbers and productivity indicate healthy local breeding populations with high reproductive rates (Oliphant 1985, Becker and Sieg 1985). Black and taiga merlin populations seem to be fairly stable after suffering minor declines during the period when DDT was used heavily. Since the ban on this chemical it appears that these two subspecies are no longer declining in numbers (Evans 1982).

Idaho is at the southern and western edges of the breeding ranges of the taiga and Richardson's merlins, respectively (Figure 1). Therefore, breeding pairs here are an uncommon occurrence. We have found only 8 verified records of merlins nesting in Idaho from 1890 to the present (Craig and Renn 1977, this report), although other adult merlins have been seen during the nesting season in the state. It is not known if these sightings are of nesters or non-breeding adults.

The purpose of this study was to determine the year-round distribution of merlins in Idaho by the use of responses from questionnaires completed by university ornithologists, state and

federal agency biologists, Audubon Society members, and falconers across the state. Areas with a large number of merlin sightings or reports of present or past active nests were then searched in an attempt to determine the current number of nesting merlins in the state.

STUDY AREA

The study area encompassed the entire state of Idaho; however, 5 locations were initially identified within the state for field investigations during the breeding season. These were selected based on prior knowledge of merlin sightings during the breeding season. Responses from the questionnaires precipitated the inclusion of 4 more areas. These locations included areas around or near: 1) the foothills of the Sublette-Black Pine mountains and Bridge, Idaho* (Cassia County); 2) Carey, Idaho* (Blaine County); 3) Birch Creek/northern INEL/Howe Peak* (Butte County); 4) Boise, Idaho (Ada County); 5) Ketchum/Hailey, Idaho (Blaine County); 6) Sand Dunes, St. Anthony, Idaho (Fremont County); 7) Indian Valley/Cuddy Mountains/Cascade Reservoir* (Adams and Valley Counties); 8) Palisades, Idaho (Bonneville County); 9) northern Idaho* (Boundary and Bonner Counties). Areas 1-5 can generally be classified as cool desert environments (Odum 1971) with big sagebrush (Artemisia tridentata)-grass the predominant vegetation at the lower elevations. Quaking aspens

*Areas identified in the original contract for field study.

(Populus tremuloides) and shrubs frequently occur in moist draws with cottonwood (Populus spp.) and Utah juniper (Juniperus osteosperma) trees along watercourses. At the higher elevations there are juniper forests and/or scattered conifers. Area 6 is covered with large, shifting sand dunes that are mostly devoid of vegetation. The surrounding sandhills have scattered shrubs; predominantly scattered junipers, with some hawthorn (Crataegus spp.) and chokecherry (Prunus spp.). Area 7 is characterized by vegetation that is largely sagebrush and cheat grass at the lower elevations. Many brushy draws intersect the area and dense coniferous forests grow several hundred feet above the valley floor. Areas 8-9 are typically dense stands of conifers with open areas created either by natural meadows or clear cuts.

METHODS AND MATERIALS

In the spring of 1988 we sent questionnaires to university ornithologists, state and federal agency biologists, Audubon Society members, and falconers, requesting information on recent sightings of merlins within the state. Follow-up letters were also sent at the end of the summer to respondents who had reported observations of merlins during previous nesting seasons. The data bank of the Idaho Natural Heritage Program was utilized to obtain additional information on merlins. Verification or clarification of information received was obtained through telephone conversations and/or personal interviews of key informants. The information from these sources was used to map

the distribution of migrating and wintering merlins in the state. It was also used to identify potential known nesting areas. Because of budget constraints, only the most likely locations identified from historical material and questionnaires were investigated during the nesting season. All merlin sightings were plotted on distribution maps. However, we have indicated separately, only those nesting season sightings that we were able to verify through personal observations or interviews with the informant. This approach gives a conservative census of potential merlin nest sites in the state. We believed that some kind of screening process was necessary because the merlin is easily confused with other raptors and, thus, difficult to identify.

Searches for nesting birds were conducted on foot and from 4-wheel drive vehicles in the 9 areas where repeated sightings of merlins had been made during the breeding season and/or where nests or family groups were reported by reliable observers. In particular, we looked for birds defending or displaying at territories and investigated any old stick nests in the vicinity. Fieldwork was initiated on 19 March and ended 10 July 1988. In addition to our field efforts, our initial informants and/or other reliable observers in each area were asked to cooperate by continuing to look for merlins throughout the remainder of the nesting season.

RESULTS AND DISCUSSION

Merlins are locally common in the state during the winter, and during spring and fall migration (August through February) (Appendix I). They appear to be concentrated around population centers during these months (Figure 2) where they are attracted by the concentrated prey source around feedlots and backyard bird feeders. These data may be biased because there are also more birders making observations in population centers. It appears that all three subspecies may be found in the state although, based on the responses to the questionnaires, the taiga merlin is probably the most common, followed by the Richardson's merlin, with the black merlin occurring least frequently.

Merlins are a rare nester in Idaho with only three verified nesting records in the state prior to 1913. These three records came from museum specimens taken in Bingham County (Stanley A. Temple, pers. comm.). Since that time there have been two other published accounts of merlins nesting in the state (Craig and Renn 1977) and three unpublished but reliable nest records that we present in this report. Our field efforts did not produce any merlin nests during the summer of 1988 although we had verified sightings of merlins and believe it quite likely that one or several of these birds may have been breeding adults.

The foothills of the Sublette-Black Pine Mountains and Bridge, Idaho. There is one verified record of nesting merlins in this portion of the study area. In 1977, several of Dr. Clayton

White's (Brigham Young University, Provo, UT) students made repeated sightings of a pair of merlins throughout the nesting season at Bridge, Idaho (Cassia County). They assumed that the birds nested near an abandoned schoolhouse in an old magpie nest located in a boxelder tree (Acer negundo) (Thurrow et al. 1980). The nest site is on the valley floor and surrounded by sagebrush and agricultural land. In 1977, 1978, 1979, and 1980 individual or family group sightings of merlins were recorded for the Raft River area (Appendix II). We spent the 1980 and 81 field seasons in the Raft River Valley area looking for merlins and did not find any active nests (Craig et al. 1981). We also spent 8 persondays there during the summer of 1988 and made no merlin sightings.

Carey, Idaho. Craig and Renn (1977) reported an active merlin nest on the western edge of the Snake River Plain during the 1973 nesting season. The nest was on a hillside covered with sagebrush in an old magpie nest in an aspen tree. The site was near a marsh in Blaine County at an elevation of 1450 m. We spent 3 persondays searching the known nest site and environs in 1988 and made no merlin sightings.

Howe, Birch Creek/northern INEL. Two merlin nests which were active in 1975, and 1976, were located on the northern edge of the Snake River Plain. Both were in old magpie nests. The first nest was in Butte County at an elevation of 1900 m in a small drainage covered with sagebrush and juniper trees. The nearest water was approximately 10 km away. The nest was located in a

juniper tree and fledged 3 young (Craig and Renn 1977). The nest area was active again in 1977 but no nest was found. In the summer of 1982 we observed a merlin on several occasions several miles from the original nest area but never found a nest.

The second nest was also in Butte County. This nest was located near the head of a sagebrush/juniper covered canyon in some low bushes above a spring (Darrus Martin, pers. comm.). The nest site and spring were destroyed in subsequent years by a BLM water trough development project. No additional nests have been found in the area. However, on 30 April 1988, we observed a female merlin in the same drainage and a Northwest Nazarene College student sighted a bird close by in late May 1988 (Leon Powers pers. comm.). Repeated searches of the area totalling 12 persondays did not turn up an active nest or any further merlin sightings.

Boise Area. In 1985 several merlin sightings were made during the nesting season near the World Center for Birds of Prey, one of which was a family group with 2 "round-winged" young (Bill Burnham, pers. comm.). The Center is located at the edge of Boise, Idaho (Ada County) in gently rolling hills covered with cheatgrass (Bromus tectorum). A large canal is at the edge of the Center's property. Although no nest was found by the staff at the World Center, they assumed that there was probably one nearby (B. Burnham, pers. comm.). No merlins have been seen around the Center since 1985 although there have been several other reports of merlin sightings in the Boise area during the

summer months (Appendix II). In addition, two different sightings were made of an adult male merlin approximately 10 miles southeast of Boise along the South Fork of the Boise River during the spring and summer 1988 (B. Burnham, pers. comm.). We spent 2 persondays in the area of the sightings and although we also saw an adult male merlin, no nest was found.

Hailey/Ketchum, Idaho. We have reports of repeated sightings of individual merlins, pairs, and family groups in the Hailey/Ketchum area by a single informant (Appendix II). The sightings were made in 1983 or 1984 and again in 1988. We spent 2 mandays searching the reported nest site areas with no success. Similarly, Roger Olson (raptor expert and District Conservation Officer for the Idaho Department of Fish and Game at Hailey) investigated the sites of the 1988 observations and continued to watch for merlins throughout the summer but did not see any birds. Although the habitat in this area appears to be excellent, we were never able to verify the merlin sightings.

Sand Dunes/St. Anthony, Idaho. In the spring of 1988, an Idaho Falls falconer (H. Quade) saw a tiercel merlin fly across a road at the eastern edge of the St. Anthony Sand Dunes. We spent 4 persondays searching excellent habitat in the area but made no further merlin sightings.

Indian Valley/ Cuddy Mountains/ Cascade Reservoir. Reliable observers have made several sightings of merlins and/or merlin family groups in these locations in previous years (Appendix II). Although the pine forests interspersed with open meadows and

creek bottoms lined with shrubs and cottonwood trees in the area appear to be excellent habitat for nesting merlins, we spent 4 persondays in this area and made no observations during 1988. However, in early July 1988, a possible merlin sighting was made in Adams County not far from where a merlin was seen in 1979 (E. Yensen, pers. comm.).

Palisades, Idaho. An active nest (2 young and an adult) was reported in this area in June of 1982 or 1983, as well as, observations of another pair of merlins in a nearby location in the spring of 1983 (Appendix II). We spent two persondays visiting the nest area in spring 1988. No merlins were observed. The area is mountainous and covered by dense timber, unlike most other merlin habitats with which we are familiar. We were unable to authenticate this nest record.

Northern Idaho. We received a report of several merlins being observed every September in the Divide Lake area (Appendix I). This informant believed merlins nest there, as well. We spent 2 persondays there in June but observed no merlins. The area is well above timberline and this large, open place in generally forested surroundings looks like an excellent place for observing migrating raptors, especially "open country" raptors like falcons.

In 1982 a merlin nest was located in Bonner County north of Bonner's Ferry, Idaho. It was in an old magpie nest in a tree adjacent to a railroad track. The nest was successful, although we have no information on the number of young fledged (Ken

English pers. comm.)). It has not been active in recent years although the same informant saw a merlin north of the nest site in July 1988 and we have several other summer sightings from Bonner County in other years. We also received a second-hand report of a pair of merlins observed in July 1988 further south in Kootenai County (Appendix II). We spent 8 persondays in northern Idaho and saw no merlins during that time. However, reports from reliable sources lead us to believe that nesting occurs there.

CONCLUSIONS: There are several assumptions that can be drawn from this study: 1) Merlins are a very rare nester in the state. However, nesting season reports of individual birds indicate that there are a number of breeding attempts made each year. Furthermore, there may be a small breeding population in Idaho. More field-work needs to be done to investigate this possibility. 2) Merlins are a regular migrant and can be found wintering, locally, in most parts of the state. 3) The merlin is so rarely encountered that most biologists are not able to identify the species accurately. 4) To determine the state-wide population status of this bird would require a significant monetary commitment. 5) The data from this report would indicate that regulated trapping of migrant (passage) birds by falconers during the fall and winter months (September through March) could be allowed but that under no circumstances should falconers be allowed to harvest nestling merlins.

We suggest that the areas identified in this report in Bonner and Kootenai County, Indian Valley, the Boise Area and the INEL/Butte County area be closely monitored for breeding merlin activity. In addition, further funding should be made in the future to intensively investigate areas that are identified as probable nesting locations.

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Figure 2. Fall, winter, and spring sighting records of merlins in the state of Idaho from 1964-1988.

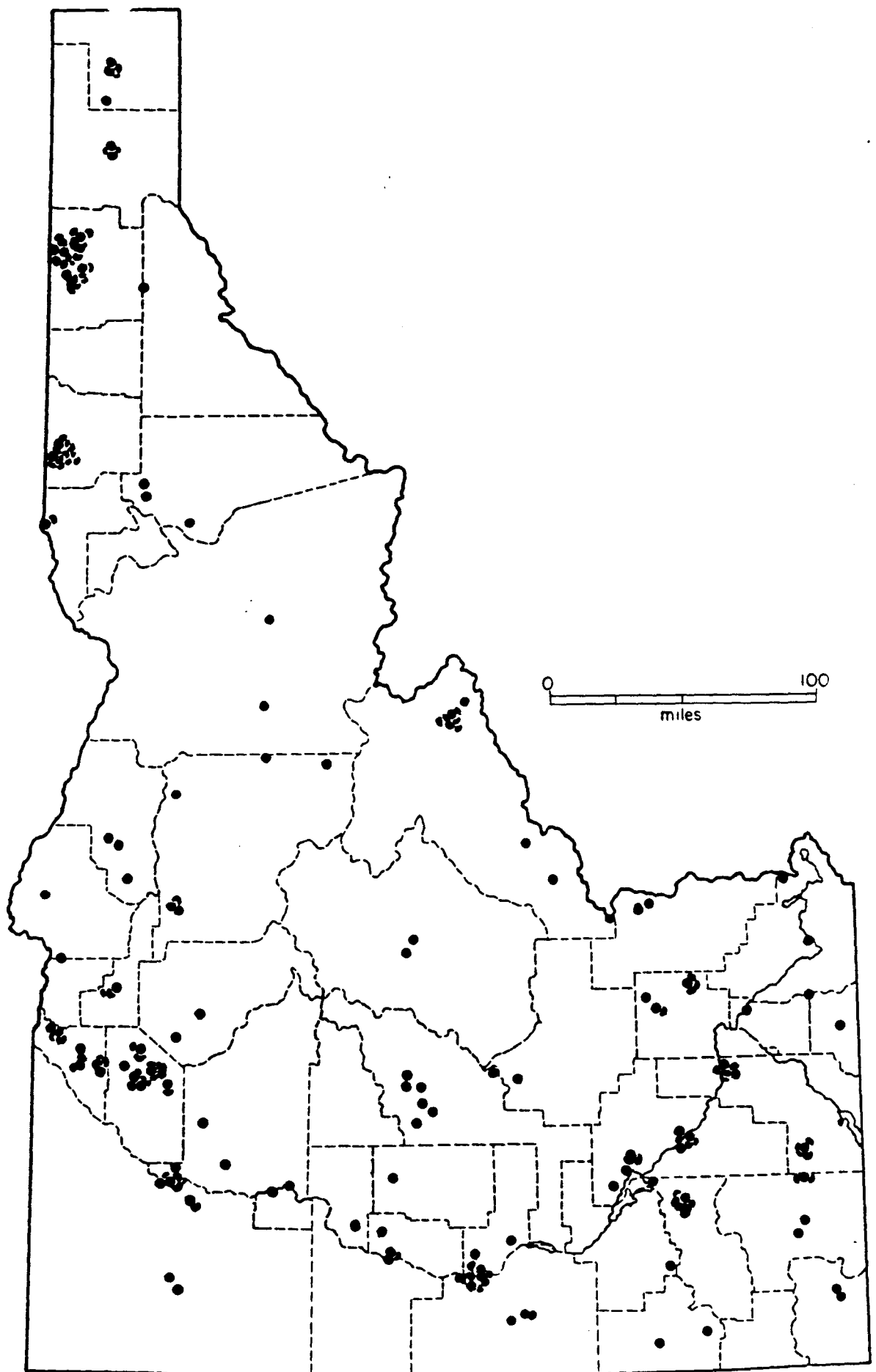


Figure 3. Breeding season records of merlins in the state of Idaho from 1964-1988. Nest sightings which we were able to authenticate are indicated with a triangle. Those which we were unable to verify are indicated on the map with an "n". Confirmed sightings of individuals, pairs or family groups during the nesting season are indicated with a solid circle. Unconfirmed sightings are designated with an "s".

APPENDIX I

Fall, winter and spring sightings of merlins in Idaho.

RECORD	DATE	LOCATION	SOURCE
1	9-15-86	Kootenai NWR, Boundary Co.	S. Sturts' (L. Nepier)
6	Sept	T.60N. R.2E., S.15, Divide Lake Area	E. Chapin
--	Sept	T.58N. R.3E., S.15	"
1	10-9-79	Kootenai NWR, Boundary Co.	P. Sieracki
1f	wntr 88	Sandpoint, ID	D. Thorscn
1	9-28-87	Rathdrum Prairie	S. Sturts' (J. Taggart)
1	2-11-84	"	"
1	10-84	"	"
1	10-14-87	"	S. Sturts'
1	10-19-87	"	(K. Sterner)
1	10-10-84	"	"
1f	10-10-86	"	"
1m	1-1-87	"	"
1juv.f	8-88	Rathdrum, ID	K. Sterner
1	9-75	Rimrock Rd., 3mi. N Hayden Lake, ID	S. Sturts'
1	8-19-79	"	(M. Manning)
1	8-2-81	"	"
1	11-5-81	"	"
--	wntr	Northern ID--Rathdrum, ID	J. Taggart
1	9-78	Northern ID	S. Sturts' (B. Walker)
1	9-27-84	Hayden Lake, ID	S. Sturts' (K. Sterner)
up to 20	wntr	Coeur d'Alene, Hayden Lake, Post Falls, and Dalton Gardens, ID (70% taiga, 30% Richardson's)	K. Sterner
2-3	fall 87	N of Coeur d'Alene, ID E of Spokane, WA (taiga)	D. Kearns
2	1-4-88	Sander's Beach, Coeur d'Alene Lake and Coeur d'Alene, ID	S. Sturts' (J. Taggart)
pair then	1-22-88to	Coeur d'Alene, ID	S. Sturts'
1 bird	2-26-88	"	(M. Manning)
1	1-16-88	"	S. Sturts' (G. Hansen)
1f	1-9-88	"	S. Sturts
1	3-86	North Idaho College campus, Coeur d'Alene, ID	W. Knoles
1	1-10-88	Blackwell Hill, 2 mi. SW Coeur d'Alene	"
1	8-87	"	S. Sturts'
1	1-10-87	"	(G. Hanson)
1	9-11-87	"	"
1	1-10-88	"	"

1	62	Benewah Lake, Chatcolet, ID	P. Printz
1	10-28-79	Cataldo Marsh	S. Sturts
1	12-27-72	Moscow, ID	S. Sturts*
			(CBC**)
1	12-27-73	Moscow, ID	"
1	12-20-75	"	"
1	12-17-77	"	"
1	12-16-78	"	"
1	12-15-79	"	"
1	12-19-81	"	"
1	12-29-84	"	"
1	1-30-82	"	S. Sturts*
			(Palouse Audubon Society)
1	4-82	Moscow, ID	S. Sturts*
			(E. Linder)
1	1-2-84	Moscow, ID	D. Johnson
1	1-8-85	"	"
1	1-10-83	Fort Russell, Moscow, ID	D. Goble
1	12-31-84	"	"
1	Dec/Jan85	"	"
1	Dec/Jan86	"	"
1	12-1&5-87	"	"
1	2-20-88	"	"
1	3-7-88	"	"
1f	2-25-88	Moscow, ID area	"
lad.m/yr.	3&4-87&88	Moscow, ID	K. Reese
lad.f	12-88	"	M. Burczynski
1/sghting	wntr72-73	"	W. Melquist
1/sghting	wntr73-74	"	"
1juv.m	11-88	Lenville Rd. 2 mi. from Moscow, ID	M. Burczynski
1	1-30-85	Paradise Ridge, Moscow, ID	B. Ackerman
1	82	3 mi. out of Moscow, ID on main hiway	S. Allen
--	wntr	U of I campus, Moscow, ID	E. Stauber
--	wntr	injured bird near Dworsak Reservoir	"
3	76/77	Dworshak Reservoir, Clearwater Co.	M. Orme
--	wntr	injured bird, Lewiston, ID	E. Stauber
1	9-14-78	Mann's Lake near Lewiston, ID	S. Sturts*
			(Palouse Audubon Society)
1	4-13-81	Hell's Gate State Park, Nez Perce Co.	M. Koliner
--	--	vicinity of Elk City, ID	J. Jones
1	10-84	Chamberlain Basin, Valley Co.	G. Hayward
--	8-85	T.24N. R.10E., Chamberlain Basin Guard Station, Payette National Forest	"
1	2-71or72	lower Big Creek in vicinity of Cabin Creek Ranch, Payette National Forest	D. Welch
1	8-83	Seven Devils Area, Idaho Co.	K. Steenhof
1	8-83	Payette Lake, Valley Co.	"
1	8-85	Council, ID area	C. Sweeney
3-4	8-84	T.13N. R.3E., S.20 BM, FAA Site on Snowbank Mt.	D. Newberry

1juv.m,2	8to9-85	Indian Valley, ID (taiga)	M. Henon
juv.f			
2juv.f	9-86	Indian Valley, ID (taiga)	M. Henon
many	wntr	Indian Valley, ID area	"
1	Aug or Sep	T.6N. R.5E., S.25 SW¼	C. Sweeney
1	wntr 79	Gardenia, ID along Payette R.	J. Gore
1	wntr87-88	N. of Emmet, ID (taiga)	B. Haak
1	2-21-88	Ballantyne Road, 2-3mi.E. of Emmett hiway	C. Sweeney
4	1-9&10-88	along freeway from Onatario, OR to Boise ID, at ID border and on Boise outskirts (taiga)	D.&K. Thee
1f	3-6-88	Caldwell, ID cemetery	C. Sweeney
1	9-9-81	Deer Flat NWR, Lake Lowell, Canyon Co.	D. Stephens
1	11-29-86	"	A. Larson
1	12-27-86	Nampa, ID CBC Circle	"
1f	3-8-84	T.3N. R.3W. S.27 SW¼	L. Powers
1f	3-10-84	"	"
1f	1-25-85	"	"
1f	2-13-85	"	"
1m	3-5-86	"	"
1f	2-24-87	"	"
1f	1-27-88	"	"
1f	2-21-88	"	"
6	Dec 88	"	"
1	3-85	Meridian, ID	A. Thomas
juv.m&f, ad.m	wntr87-88	4 mi. NW Eagle, ID (black merlins)	B. Haak
1	2-25-85	Eagle, ID	R. Howard* (B. Burnham)
3-5/mo.	11-87 to 2-88	throughout Boise, Eagle farmland (most taiga with 1 bird/month black and 1/month Richardson's)	A. Graves
1	2-85	Ada Co.	F. Nesmith
1	10-14-79	Fort Boise WMA, Canyon Co.	D. Stephens
1	11-11-82	"	"
1	10-12-84	N. 20th St., Boise, ID	J. Marks
1	12-16-88	"	"
20	wntr87-88	Boise, ID (most taiga)	B. Haak
1	1-87	North of NY Canal, Boise, ID	P. Harrity
--	Dec-Jan	Boise, ID (birds were quite dark)	E. Cleaveland
1	9-86	World Center for BOP, 5 mi. S Boise, ID	P. Harrity
1	9-87	"	"
repeated sightings	11-19-86- 12-31-86	3015 Silver St., Boise, ID	A. Larson
repeated sightings	1-1-87- 4-11-87	"	"
repeated sightings	10-9-87- 3-25-88	"	"
1	1-26-87	green belt, Boise, ID	"
1	12-19-87	NW Boise CBC, Boise, ID	"
1	2-17-88	T.1S. R.4E., S.14 NW/NW	J. Marks
1m	10-22-83	Upper Mann Cr.	"

several sightings	fall-wntr 75	Barber Rd. and Hiway 21, Boise Area	C. Sweeney
several sightings	wntr 86-87	Barber Pool area, Boise, ID	"
--	wntr	W/S of Boise, Meridian, Nampa, and Kuna, ID (at least 2 were black merlins)	J. Woody
--	wntr	Boise, ID	J. Hansen
1	late Aug.	Black's Creek, Boise, ID area	C. Schwartz
1	11-6-87	T.2S. R.5E., S.3	R. Sellers
several	wntr 83-88	near Hubbard Res., SW Boise, ID	M. Bechard
--	Oct-Apr	Southwest Idaho (all subspp. & ages)	E. Tabb
--	Dec-Mar	T.4S. R.3E., S.5	J. Doremus
	"	T.4S. 4.3E., S.9	"
	"	T.4S. R.3E., S.26	"
	"	T.4S. R.3E., S.31	"
	"	T.4S. R.3E., S.31	"
1-3/yr	Feb, Mar, Apr 77-81	T.4S. R.3E., S.35 SW/NW, Simplot Feedyard Grandview, ID	"
--	Dec-Mar	T.5S. R.3E., S.3	"
	"	T.5S. R.3E., S.2	"
	"	T.5S. R.3E., S.2	"
	"	T.6S. R.5E., S.6 NW/SE	"
	"	T.6S. R.5E., S.17	"
	"	T.6S. R.5E., S.17	"
--	wntr	Glenns Ferry and Mountain Home, ID	J. Kavajecz
1	wntr	Snake River at King Hill, ID	T. Chu
1	11-18-84	I-84 bridge at Snake R.	J. Marks
1	wntr	S side of C.J. Strike Reservoir	C. Sweeney
1	October	T.11S. R.4E., S.32	B. Mullins
1f	--	T.11S. R.4E., S.32, 10mi. NW Grasmere	W. Mullins
1	wwntr 84	T.5S. R.16E., Magic Reservoir	S. Langenstein
1	9-3-86	T.3N. R.23E., S.27, near mouth of Dry Canyon	G. Hompland
3-8	wntr	Hailey, Jerome, Wendell	R. Olson
1	wntr	T.2N. R.18E., S.36	T. Chu
1	wntr	T.1S. R.19E., S.10	"
1	wntr	Bellevue, ID	T. Chu
1	12-76	Silver Creek Nature Conservancy	B. Sturges
1	1-3-88	"	"
1	2-77	Blaine C., Silver Creek	"
1	3-77	"	"
1	wntr	Silver Creek Valley at Gannett, ID	T. Chu
1	wntr	T.8S. R.17E., S.17	"
2	wntr	E of Region 4 F&G office, Jerome, ID	"
2	12-15-84	south of and next to Jerome Ctry Club	T. Rich
1	12-14-84	Blue Lakes Country Club near Twin Falls	"
2f	wntr	Mayfield, ID (Richardson's)	J. Hansen
1	12-19-86	T.9S. R.22E., S.22 SW¼	D. Leptich
10	wntr 87-88	within a 10 mi. radius of Milner Dam and Burley, ID	S. Zollinger
1	--	Rupert, ID	D. Poppleton
1m	2-84	T.13S. R.25E., Lower Jim Sage Range	D. Santini

1m	2-85	T.13S. R.26E., Lower Jim Sage Range	"
1	8-79	Cottonwood Creek, Cassia Co.	K. Kiler
25-30 in	--	Clark, Bonneville, Jefferson, Ada, and	A. Ogden
last 10 yr		Canyon Co.	
1/sighting	78-84	various locations in SE ID	C. Peck
1	75	Pocatello, ID	E. Bottum
1	1-7-64	"	J. Jeppson
1	11-27-72	"	"
1	8-14-73	"	"
1	1-4-73	"	"
1	2-11-75	"	"
1	11-2-75	"	"
1	2-14-76	"	"
1	1-1-79	"	"
1	3-10-80	"	"
1	11-22-80	"	"
1	12-14-87	ISU campus, Pocatello, ID	D. Stephens
1	3-9-85	Pocatello, ID	C. Trost
--	wntr	Pocatello, ID area	"
several	numerous	Caribou and Franklin Counties	B. Davidson
1	3-10-85	Arbon Valley, Power Co.	C. Trost
1	2-84	Boone Creek mouth near Sterling, ID	B. George
1ad.	wntr	Sterling Game Management Area,	S. Bouffard
		Aberdeen, ID	
1	12-84	Near Sterling WMA, Bingham Co.	S. Bouffard
1	9-86	Tilden Bridge, American Falls Res. area	C. Schwartz
1	9-87	"	"
1m	84	Springfield Refuge, Bingham Co.	G. Copeland
ad.mjuv.f	wntr87-88	E of Blackfoot, ID (Richardson's)	B. Haak
10-20/yr	Oct-Jan	E of Blackfoot, ID	R. Holz
3	83 & 84	Snake River near Blackfoot	B. Phillips
1	70	Carlow, Oneida Co.	J. Spillet
1	80	T.15S. R33E., S.17	K. Timothy
1	11-83	near mouth of Secret Canyon, Malad, ID	B. George
--	Jan-Feb88	Bennington, ID	L. Hlavaty
1	Fall 84	Conda, Caribou Co.	C. Chaffin
0-3/yr	Sept.	Gray's Lake NWR (birds are migrants)	R. Drewien
--	Nov-Jan	at farms/feedlots around Idaho Falls,	W. Smith
		Rexburg, Terreton, Mud Lake and	
		Montevue, ID	
3	spr/fall	Camas NWR, Jefferson Co.	J. Richardson
1	12-19-77	43 29' & 112 02', Idaho Falls, ID	S. Reichel
1	12-78	"	"
6	fall82-85	Idaho Falls, and Mud Lake, ID areas	J. Naderman
4	wntr	N of Idaho Falls, ID on Lewisville Hwy	T. Chu
1	8-28-88	Teton R. Canyon between Spring Hollow	M. Gamblin
		and Winderman Dam	
1	9-81	Sawtooth Valley	T. Phillips
1	3-81	T.9N. R.44E., S.2, Robinson Creek	G. Worden
1	8-85	Willow Ck. near ID-MT line, Fremont Co.	J. Curry
1	3-84	Fremont Co.	F. Nesmith
1	9-82	Lemhi Co.	W. Osborne

1	fall	"	C. Grother
1m	wntr 82	10 mi. S Leadore, ID	T. & E. Craig
1f	spr 84	5 mi. N Leadore, ID	"
1f	12-26-85	T.21N. R.22E., S.6, Salmon, ID	L. Haggas
1f	12-28-84	"	"
1f	1-4-85	T.21N. R.22E., S.8, Salmon, ID	"
1	12-16-84	T.21N. R.22E., S.6, Salmon, ID	H. Roberts
--	wntr81-88	T.22N. R.22E., S.19 & 30	D. Wenger
1m	9-88	E Fork Salmon R., mouth of Road Creek	T. Craig
--	--	E Fork Salmon R., Herd Creek	J. Peek