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THE STATUS AND DISTRIBUTION OF DIURNAL RAPTORS IN JAPAN

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ABSTRACT

Twenty-nine species of diurnal birds of prey have so far been recorded from Japan, 16 of which breed. Most species are not abundant, several are rare and most are threatened by habitat loss and poaching to some extent. Information is given on distribution, status, habitat, diet and migration where it is available.

INTRODUCTION

Japan has a rich and varied avifauna. Its diurnal raptors are no exception. So far, twenty-nine species of diurnal raptor have been recorded from Japan. Most species are not abundant and some are rare and endangered. Of the 29 species, 14 are resident at least in some parts of Japan (Osprey *Pandion haliaetus*, Black Kite *Milvus migrans*, White-tailed Eagle *Haliaeetus albicilla*, Northern Goshawk *Accipiter gentilis*, Japanese Sparrowhawk *A. gularis*, Common Sparrowhawk *A. nisus*, Common Buzzard *Buteo buteo*, Grey-faced Buzzard *Butastur indicus*, Hodgson's Hawk Eagle *Spizaetus nipalensis*, Golden Eagle *Aquila chrysaetos*, Crested Serpent Eagle *Spilornis cheela*, Eastern Marsh Harrier *Circus spilonotus*, Peregrine Falcon *Falco peregrinus* and Eurasian Kestrel *F. tinnunculus*), six species are winter visitors (White-tailed Eagle, Steller's Sea Eagle *H. pelagicus*, Rough-legged Buzzard *B. lagopus*, Hen Harrier *C. cyaneus*, Gyrfalcon *F. rusticolus* and Merlin *F. columbarius*), four species are summer visitors (Crested Honey Buzzard *Pernis ptilorhynchus*, Japanese Sparrowhawk, Grey-faced Buzzard and Northern Hobby *F. subbuteo*), one species occurs only as a migrant (Chinese Sparrowhawk *A. soloensis*) and seven species are vagrants (Upland Buzzard *B. hemilasius*, Greater Spotted Eagle *Aquila clanga*, Imperial Eagle *A. heliaca*, Cinereous Vulture *Aegypius monachus*, Pied Harrier *C. melanoleucos*, Lesser Kestrel *F. naumanni*, and Amur Falcon *F. amurensis*).

Birds of prey have on the whole been very little studied in Japan, although the Golden Eagle and recently the Northern Goshawk are notable exceptions. Birds of prey in Japan are fully protected and may not be hunted according to the law relating to Wildlife Protection and Hunting. Ten species and subspecies are designated as "Special Birds for Protection" (those in danger of extinction) by the Law Relating to the Regulation of Transfer of Special Birds and Related Legislation, and five species are designated by law as 'National Monuments' (Hanawa 1985).

Although birds of prey are protected by law, most of their habitats are not conserved. Construction of logging roads, clearance of natural forest and replacement by plantations have and continue to destroy the habitat of many species. In addition, poaching or illegal hunting occurs and threatens some species, especially Northern Goshawk, Grey-faced Buzzard, Hodgson's Hawk Eagle, Golden Eagle, Peregrine and Eurasian Kestrel. The main aim of poaching is to make stuffed birds for sale (Hanawa 1985), although some Northern Goshawks are taken for falconry (Nakayama 1985), and on Miyako Island Grey-faced Buzzards are poached for food.

In this paper, following the format of Brazil & Yamamoto (1989) on the Owls of Japan, we aim to give an overview of the distribution and status of all thirty species of diurnal raptors occurring in Japan by reviewing the available published material in both Japanese and English.

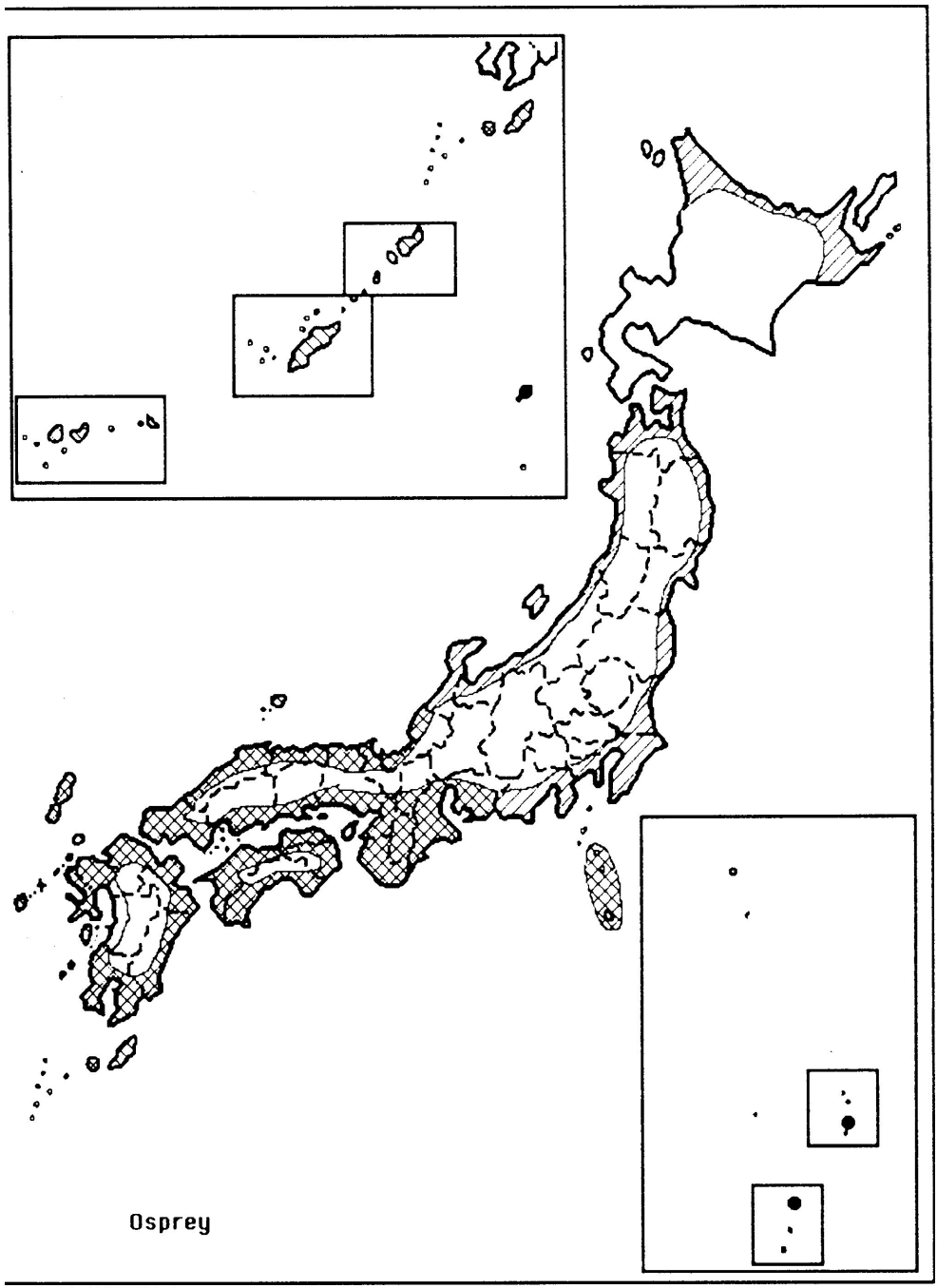
SPECIES ACCOUNTS

1. Osprey *Pandion haliaetus* Misago*

Distribution: The Osprey has been recorded from and breeds locally (b) in: Hokkaido (b); Honshu (b); Sado (b), Shikoku (b); Kyushu (b); Oki (b), Tsushima (b), the Goto Islands (b); Oshima to Hachijo-jima in the Izu Islands, Chichi-jima, Kita-iwo-jima; Tanegashima, Yakushima, Amami-oshima, Okinawa, Zamami-jima, Ishigaki-jima, Iriomote-jima and the Daito Islands (Austin & Kuroda 1953; OSJ 1974; Hanawa 1984).

Status: A coastal resident from Kyushu north to northern Honshu, and a summer visitor in Hokkaido, the Osprey breeds locally in the four main islands and on various offshore islands, sometimes in small colonies. First observed in summer in Hokkaido by Jahn (1942), but breeding was not confirmed there until after 1953 (Austin & Kuroda 1953). It bred annually until 1972 at Bettoga (Takada pers. comm.) for example, and probably breeds near Mashu-ko and in the Akan National Park and perhaps at several other localities. In winter northern birds move south, although migration routes have not been documented. There is some evidence of winter

* Japanese names follow WBSJ (1982) except in the case of recent additions to the Japanese list, when we have followed Yamashina (1986).


Osprey

concentrations occurring; there were for example eight together at Zuibaiji-gawa in northern Kyushu in February 1988 (Brazil 1988).

Habitat: During the breeding season it occurs along rocky coasts, around islands, and on inland hills near lakes if nesting sites are available (OSJ 1974), and in winter also at major rivers and at estuaries.

Breeding: Breeding is poorly known in Japan but the season probably lasts from late March in the south to August in the north, though mainly from May to July. The large stick nest is built high up usually in a conifer e.g. 7.5m above ground (Kobayashi 1953). The clutch is of 2-3 eggs, incubation taking 35 days and fledging 56-70 days (Kobayashi 1953; Kiyosu 1965; Kuroda 1984).

Prey: The diet consists mostly of fish such as salmon, trout, carp and grey mullet (Kiyosu 1965).

Voice: Adults are usually silent except when alarmed, when they give sharp "kui, kui, kui", "ki, ki, ki" or "chi, chi ..." calls (Kiyosu 1965; Takano 1982).

Subspecies: *P.h. haliaetus* (OSJ 1974).

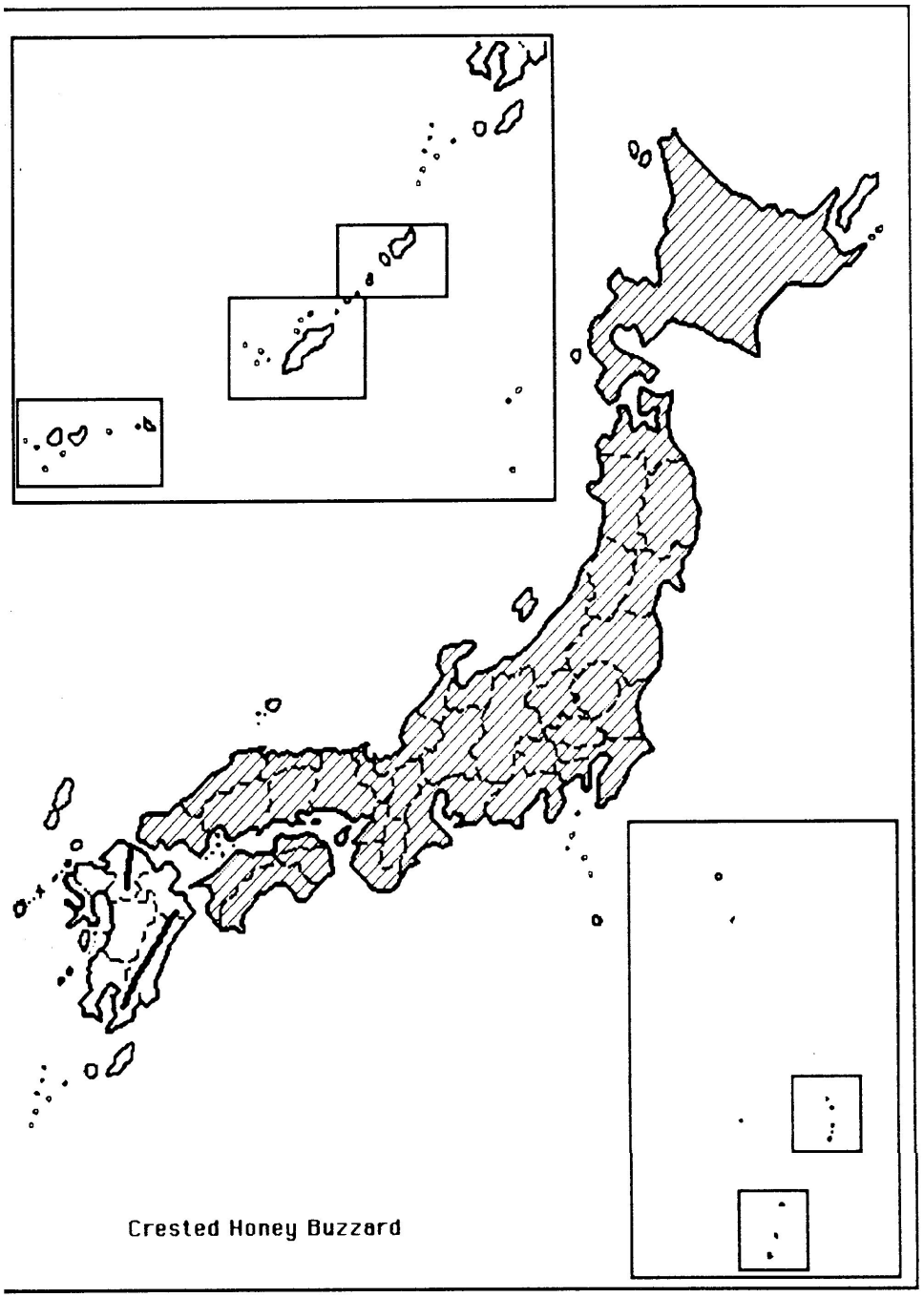
2. Crested Honey Buzzard *Pernis ptilorhynchus* Hachikuma

Distribution: The Crested Honey Buzzard was first recorded in Japan by Temminck & Schlegel (1847) presumably from the Nagasaki area of Kyushu, then subsequently from Hokkaido (b); Honshu (b); Kyushu; Tsushima, Koshiki-jima; Okinawa, Zamami-jima and Miyako-jima (OSJ 1974; McWhirter & Ikenaga in prep.).

Status: The Crested Honey Buzzard was very rare in Japan according to Seebohm (1890), who knew of only two specimens. Since Seebohm's day, however, it has been recorded more widely and is now regarded as an uncommon and local summer visitor from May to October to low forested mountains (up to 1,500m) in central and northern Honshu and a very rare summer visitor to Hokkaido (Austin & Kuroda 1953; OSJ 1974; Takada pers. comm.) where it rarely occurs as late as October, although one was over Showa Shinzan, southwest Hokkaido, on 25 October 1985 (Brazil 1985c). Of the breeding birds of prey, given that it is so widespread, it is one of the least frequently seen.

Habitat: It favours broadleaved forest on hills and lower mountain slopes, occurring at lower altitudes in the north than in the south.

Breeding: The breeding season is from May to August, nests are built 10-28m up, usually in a mature oak, occasionally in a pine or cedar, and the clutch is of 2 eggs, with incubation taking 28-35 days and fledging a further


Crested Honey Buzzard

35-45 days (Austin & Kuroda 1953; Kiyosu 1965; Kuroda 1984).

Migration: It migrates along traditional routes from Japan through Taiwan probably to the Philippines with some following essentially the same route as that described for *Butastur indicus* (Morishita 1986) although it is very uncommon in southern Kyushu and the Nansei Shoto. Large numbers pass through northeast Kyushu (from southwest Honshu) in late September (up to 1,500 in a day) and lesser numbers to mid-October (Nishida 1962) and may continue to China from northern Kyushu via the East China Sea. It also occurs over islands in the Sea of Japan on migration, for example over Hegura-Jima, Ishikawa-ken, in mid-and late May (Ishikawa Yacho no Kai 1979). Surprisingly, it appears not to have been recorded from the Nansei Shoto until 1982, when one was reported on Zamami-jima on 16 October. It has since been found at least four times on Okinawa in April, September and October and on Miyako-jima in November (McWhirter & Ikenaga in prep.). Occasionally individuals are reported wintering in southern Japan (Austin & Kuroda 1953).

Prey: The diet consists almost exclusively of insects (91%), particularly crickets and Hymenoptera spp. (Ikeda 1956).

Voice: Essentially a silent species, but does call, a whistled "pyo", sometimes during the breeding season (Kiyosu 1965).

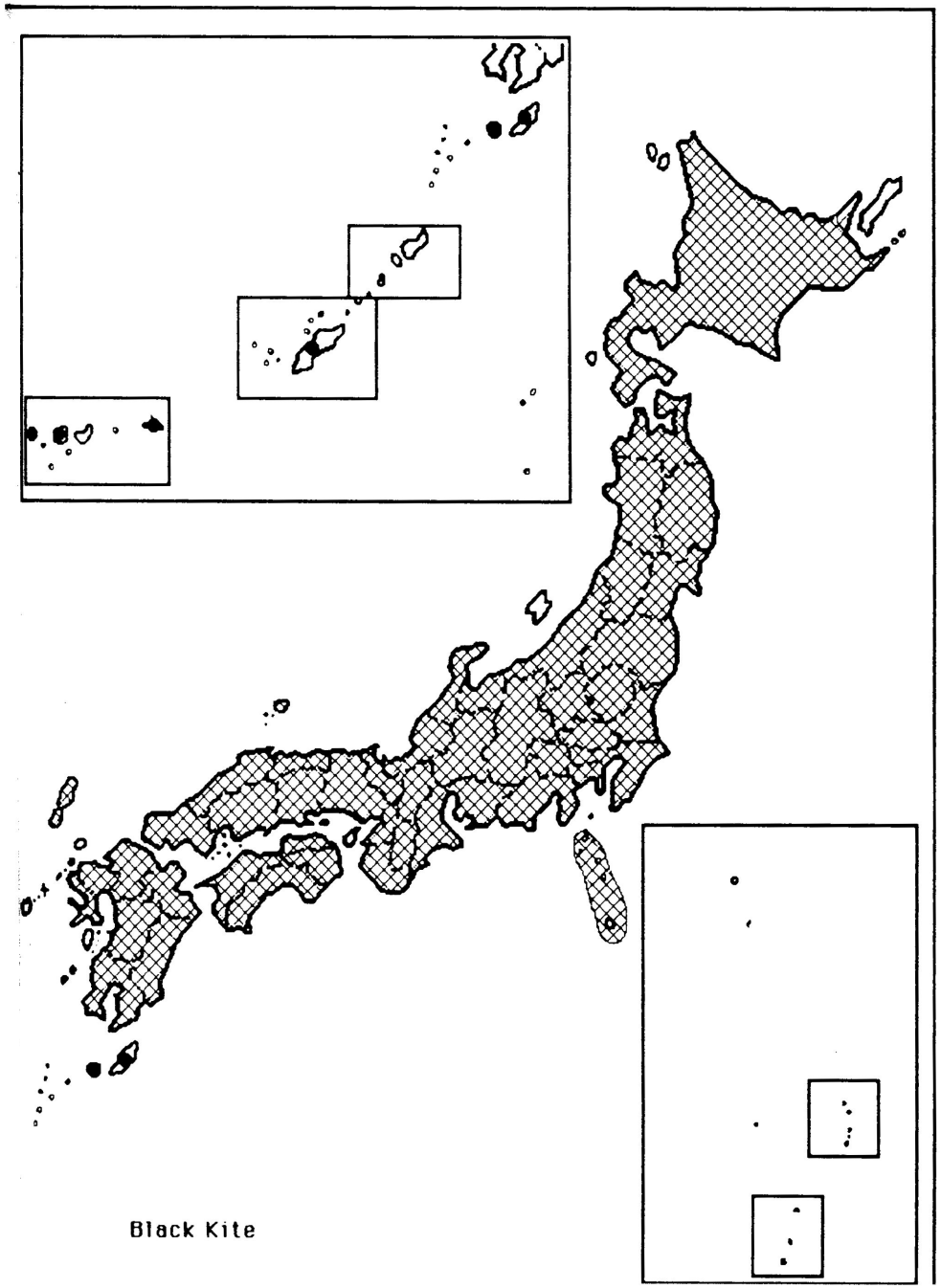
Subspecies: *P.p. japonicus* (=*orientalis*) (OSJ 1974).

3. Black Kite *Milvus migrans* Tobi

Distribution: Regarded as a potentially distinct species, the Black-eared Kite *M. lineatus* by some authors (e.g. Kuhlman 1987), the Black Kite has been recorded from: Hokkaido (b); Honshu (b); Sado (b), Oki (b), Shikoku (b); Kyushu (b); Tsushima (b), Iki; Oshima to Hachijo-jima in the Izu Islands; Makeshima, Tanegashima, Yakushima, Okinawa, Miyako-jima Iriomote-jima and Yonaguni-jima (OSJ 1974; WBSY 1982; Hanawa 1984; McWhirter & Ikenaga in prep.).

Status: A common resident throughout Japan, from Hokkaido to Kyushu and on many of the offshore islands, although only a straggler to the Nansei Shoto. It is the commonest bird of prey in Japan, occurring in virtually all habitats, but particularly abundant in and around suburban areas and around harbours and fishing villages. However, in a study area in Kobe, the kite population has declined noticeably as result of competition with Jungle Crows for both nest and roost sites (Kuhlman 1987).

In Hokkaido at least, and possibly elsewhere, it is partially migratory. All kites leave the Shiretoko Peninsula and other areas of northern Hokkaido during winter and there are extremely large gatherings at city refuse dumps, particularly at Kushiro in the southeast. In other areas, in Honshu, for


Black Kite

example, roosts peak in numbers during winter (December) (Kuhlman 1987) indicating that there is some movement of birds outside the breeding season, presumably from higher altitudes. At this season it also occurs as a rarity in the Nansei Shoto, with records now from as far south as Iriomote-jima on 6 December 1976 and 6-8 February 1981, and on Yonaguni-jima on 10 March 1973 (WBSY 1982; McWhirter & Ikenaga in prep.).

Habitat: Usually found in the lowlands, below about 750m, breeding in woodlands, particularly in wooded valleys among low hills, and foraging out over agricultural land, the coast and city suburbs, although it also occurs in low mountains, even at up to about 2,100m, on Mt. Fuji (Austin & Kuroda 1953), but is particularly common around fishing harbours.

Breeding: Pairing and nesting can begin as early as late February, when it becomes very vocal. However, the breeding season is usually from March to July. Nests are built in large trees close to the trunk or on thick main branches more than 2.5m above the ground. The clutch consists of 2-4, usually 3, eggs, with the earliest laid in mid-March. Hatching typically occurs in mid-April to late May, and fledging in late May to mid-July (Kuhlman 1981; Kawaji & Shiraishi 1980; Koga & Shiraishi 1987).

Prey: Fish, probably mostly as carrion, is the commonest source of food, but birds such as feral pigeons and crows, rodents such as road-kill rats, reptiles and edible waste from rubbish, are also eaten as well as insects (Kuhlman 1981; Kawaji & Shiraishi 1980; Koga & Shiraishi 1987).

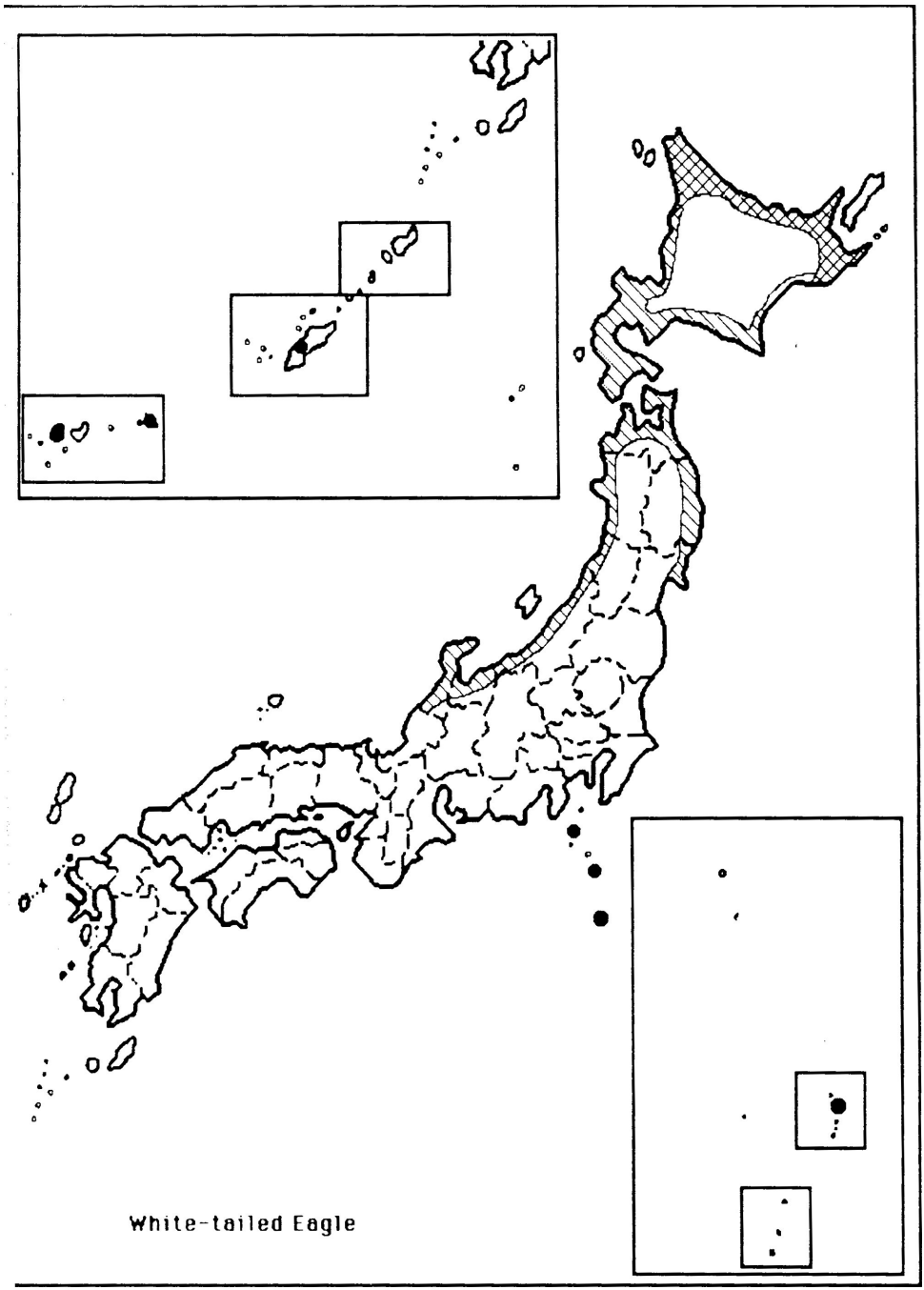
Voice: A mournful descending whistle, "pi-rrr", or "Pi-hyoro, hyoro, hyoro" (Kuhlman 1981; Takano 1982; Yamashina 1982).

Subspecies: *M.m. lineatus* (OSJ 1974).

4. White-tailed Eagle *Haliaeetus albicilla* Ojiro-washi

Distribution: The White-tailed Eagle was certainly known as a Japanese bird to Blakiston & Pryer (1878) and has subsequently been recorded from: Hokkaido (b); Honshu; Sado, Oki, Shikoku; Kyushu; Tsushima; Oshima, Miyake-jima, Mikura-jima, Hachijo-jima, Chichi-jima; Okinawa, Miyako-jima, and Iriomote-jima (OSJ 1974; Takara 1979; Kohno & Shoyama 1982; WBSY 1982).

Status: This species is now designated as a 'National Monument' by the Japanese Cultural Agency. According to Seebohm (1890) it was a common resident on all Japanese coasts, although this is likely to have been an error. It is now clearly a not uncommon winter visitor along the coasts of Hokkaido. It is in fact locally common there in winter, for example 500+ occur along the Shiretoko Peninsula at the peak in February. In southern Hokkaido birds occur mainly around lakes from September to November, moving to rivers inland and river mouths when the lakes begin to freeze in


White-tailed Eagle

December. Numbers decline from March onwards and in summer they are found around lakes (Tokachi Chapter, WBSJ 1983). Further south it is an uncommon or rare winter visitor to Honshu, commoner in the north than in the south, and to Tsushima, and has wandered as an accidental as far south as Chichi-jima in the Ogasawara Islands (OSJ 1974) and to Iriomote-jima in the Nansei Shoto (an immature on 21 November 1978) (Takara 1979).

Habitat: In winter it occurs offshore on sea-ice, along rocky coasts, capes and headlands in Hokkaido, and at large lakes and rivers further south. On rare occasions it also appears in inland mountain districts, possibly when crossing from one coastal region to another (Ueuma & Nakamura 1983). In the Tokachi district of Hokkaido sea-coasts and rivers are equally favoured between December and April (WBSJ Tokachi Chapter 1983). In summer it occurs along forested mountain slopes and cliffs near the sea, rocky sea coasts, large coastal lagoons surrounded by forest and at some inland lakes.

Breeding: It was suspected of breeding in Hokkaido by Jahn (1942), who saw it in the Akan region on 16 July 1939, and was claimed as first proven to breed there in 1954 and 1955 (Haga 1955, 1957), although it seems both authors overlooked Blakiston & Pryer's (1878) much earlier note that it breeds in Hokkaido. It is now, during the 1980s, a rare breeding bird in northern and eastern Hokkaido, with probably no more than 20 pairs nesting in any one year. It was considered by Mori (1980) to be restricted to the northern and eastern coasts of Hokkaido, but during the 1980s it has begun to spread westwards along the south coast too.

The breeding season is from March to August, although displaying begins even during February. The call is only given occasionally according to Kiyosu (1965); however at the wintering concentrations on the Shiretoko Peninsula the birds are quite vocal in January and February, increasingly so in February, especially during aerial displays (Brazil pers. obs.).

The clutch of 1-3, usually 1 or 2, eggs is laid as early as mid-March. Incubation takes 35-40 days and fledging a further 70-90 days. The large stick nests which are added to year after year are built 16-25m above the ground in a fork in a large deciduous or coniferous tree, generally on the upper parts of a steep slope commanding extensive views (Mori 1980; Yamashina 1982; Kuroda 1984). A nest found 12m up in an oak at Onnenai, Abashiri, on 6 May 1954 with 2 nestlings was the first fully documented breeding record for Japan (Haga 1955) and the second and third were at Nohkamappu in 1954/55 with one nestling and at Onnetto two nestlings in 1955 (Haga 1957). It has probably bred annually since then, but whether the current population represents an increase over that in the 1950s, or whether just an increasing number of pairs has been found, is not known, although there are indications that its range is spreading slowly. All nests observed so far in Japan have been in trees (Mori 1980).

Migration: While its migratory movements have not been studied, it is likely that northern birds enter Japan either from the northeast via the Kurile Island chain from Kamchatka, or from the north via Sakhalin. Southern records may refer to birds which have travelled through Japan from the north, but it is more likely that they enter Kyushu and further south from the Korean Peninsula. A rather late returning migrant, an adult, was seen flying north on 24 April 1987 over Itski-jima, Nagasaki-ken, in Kyushu (Vlugt *in litt.*).

Prey: Includes a wide variety of birds (especially duck, seabirds and gulls), mammals up to the size of Red Fox, and a wide variety of fish (Mori 1980). Much of the food is taken as carrion, but they will tackle large animals, even doing so cooperatively on occasion. I have watched a pair repeatedly attacking a family party of Whooper Swans although in the end they were unsuccessful.

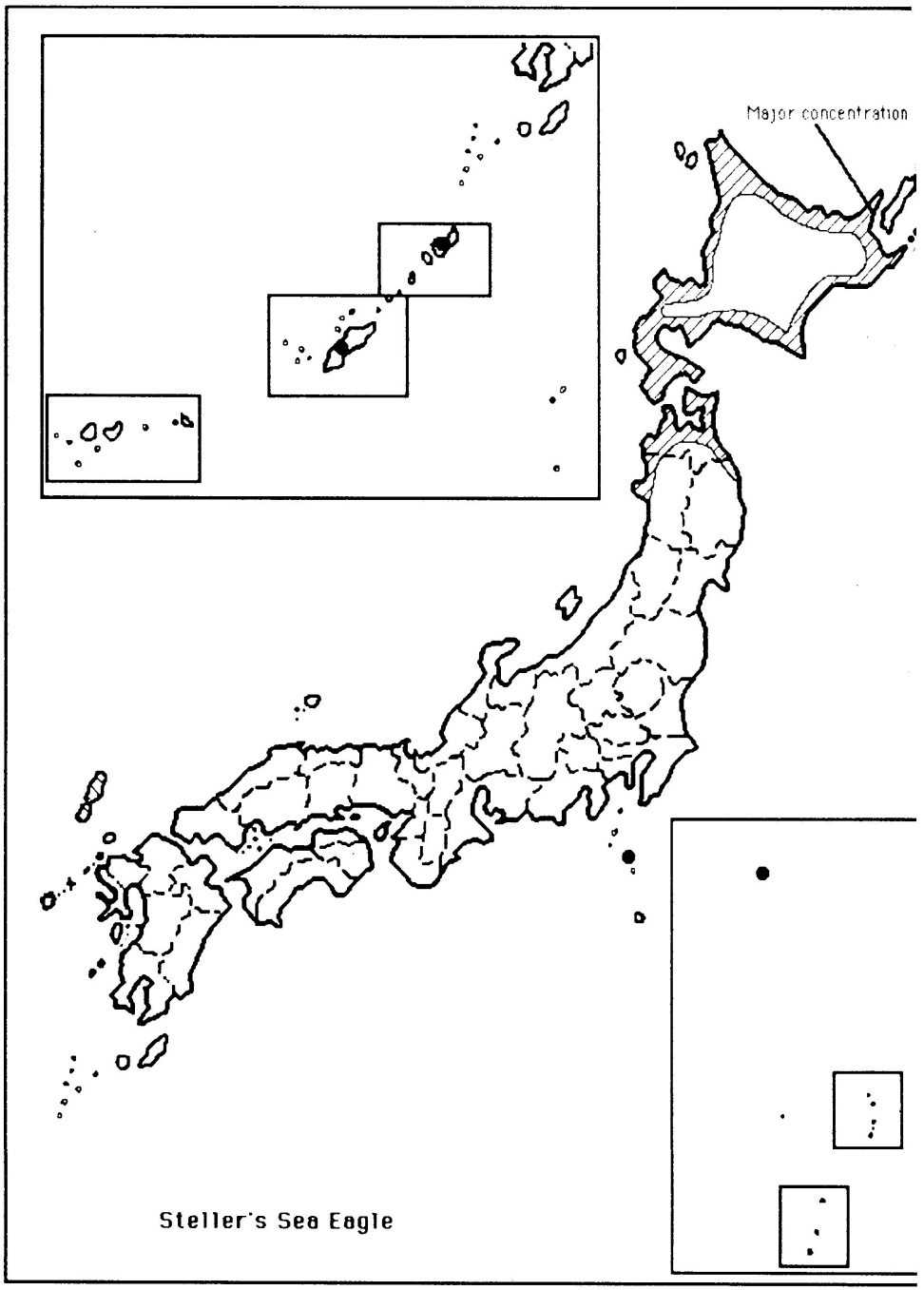
Voice: The call is a barking "Kie, kie, kie..." (Kiyosu 1965; Brazil pers. obs.).

Subspecies: *H.a. albicilla* (OSJ 1974).

5. Steller's Sea Eagle *Haliaeetus pelagicus* **O-washi**

Distribution: Subspecies *H. p. pelagicus* has been recorded from: Hokkaido; Honshu; Sado, Oki, Shikoku; Kyushu (e.g. 1 imm Saga December 1931; Kuroda 1959), Tsushima, the Goto Islands; Niijima, Miyake-jima, Torishima (15 February 1930); Amami-oshima, and Okinawa (December or January c1886) (Stejneger 1887; Seebohm 1888; Yamashina 1942; Nakamura 1953; Vaurie 1965). Interestingly, of the many plumage stages related to age in this species, one resembles closely the descriptions of the supposed *H. p. niger* of Korea, which may in fact not be a good subspecies.

Status: Designated as a 'National Monument' and classified as a "Special Bird for Protection" by the Cultural Agency. Seebohm (1890) regarded it as a frequent winter visitor, more often seen in Hokkaido than elsewhere, but by the time it was better known 60 years later it was considered to be a rare winter visitor to coastal Hokkaido (Austin & Kuroda 1953; OSJ 1958). It was only recorded on 28 March 1970 & 23 March 1972 by Fujimaki & Matsuoka (1972) in a study in western Hokkaido and it would appear that its status has changed with a major increase between 1975-80. The greatly increased winter fishing at Rausu, which peaks in February and March when up to 30,000 tons of fish may be taken by the fleet, appears to have attracted increasing numbers to the fishing grounds off the Shiretoko Peninsula. It is now a locally common, even very common, winter visitor from early November (adults occurred on the Okhotsk coast of the Shiretoko Peninsula on 3 November 1984, on 7 November 1985 at Notsuke; Brazil 1983c, 1984/


Major concentration
Steller's Sea Eagle

1985) and exceptionally late October (e.g. two immatures at Shunkunitai on 29 October 1985; Brazil 1985c), remaining until late March in northern and eastern Hokkaido.

The total world population, estimated at about 4,000 by Galushin & Pererva (1982), is now put at 6,000-7,000 after a survey in winter 1985/1986, which found about 3,500-4,000 on the Kamchatka Peninsula and just over 2,000 in Japan (Fujimaki 1987; Nakagawa *et al.* 1987; Shibaev 1987). The breeding population is estimated at 2,200 pairs (Lobkov & Neufeldt 1986). The largest readily accessible winter concentration in the world is on the Shiretoko Peninsula from Rausu northwards, where more than 2,000 have been recorded at the peak (in February) (Brazil 1986, 1987a), and where there is regularly more than 90% of Japan's wintering population. There, in February, 93% are adult, although this declines to only 36% by March. This area thus holds up to a third of the population in winter and in conservation terms is the single most important area for the species. Here in winter it can be quite vocal, adding to the spectacle of hundreds of eagles leaving their communal roosts before dawn. It calls quite frequently during squabbles over food, roosting places and during aerial displays at winter gatherings such as that on the Shiretoko Peninsula. Elsewhere in Hokkaido Steller's Sea Eagle is less common, and from Honshu southwards is a rare winter visitor (Austin & Kuroda 1953; OSJ 1958), usually occurring singly between November and April, for example at Izunuma and Kinkazan Island, Miyagi-ken (Tachibana 1962; Sato *et al.* 1968; Brazil 1983a) and in Yamanashi-ken (Nakamura 1953), and rarely reaching Kyushu, where the first record appears to be that of an immature at Saga in December 1931 (Kuroda 1959). It occasionally straggles even further south; the southernmost records being from Torishima (Yamashina 1942) and Okinawa (Stejneger 1887; Seebohm 1888).

Immatures greatly outnumber adults in the southern part of Hokkaido throughout the winter (WBSJ Tokachi Chapter, 1983), whereas along the Shiretoko Peninsula this is only so in late winter and early spring after breeding adults have started moving back northwards (Brazil pers. obs.). Immature birds sometimes remain into May and even as late as 17 June along the Shiretoko Peninsula (Brazil 1987b), and in 1986 a sub-adult summered in northern Hokkaido (Yamamoto pers. comm.). Breeding has not occurred in Japan although displays are seen annually in late winter and early spring on the Shiretoko Peninsula (Brazil 1986).

The earliest records each autumn are usually in the first week of November along the east coast of Hokkaido, then along the Okhotsk coast (although Takedatsu saw an adult at Tofutsu-ko on 15 September 1972 (in Thiede 1974) which, if it was not a summering bird, is the earliest autumn record of all).

Numbers along the Shiretoko Peninsula seem to vary considerably on a

daily basis, suggesting that they quit their major roosts there to visit the island of Kunashiri, a Soviet held island, across the Nemuro Straits from Rausu, when the sea-ice drifts in that direction.

Habitat: Occurs over sea-ice, along rocky sea coasts, capes and headlands, along forested mountain slopes and cliffs near the sea, around large coastal lagoons surrounded by forest and, away from the main concentrations, also at large lakes and rivers. In southern Hokkaido, where small numbers winter, it occurs primarily along the coast from December to April and occasionally inland along rivers but not as far from the coast as *H. albicilla* (WBSJ Tokachi Chapter, 1983).

Migration: The earliest records each autumn are usually along the east coast of Hokkaido, then on the Okhotsk coast. As the sea-ice moves in towards the shore the eagles move across the Shiretoko Penninsula to the Rausu side, usually in late December or January; thus it is likely that northern birds enter Japan either from the north-east via the Kurile Island chain from Kamchatka, from the north via Sakhalin, or perhaps with the advancing ice on a broad front across the Okhotsk Sea. Southern birds may travel through Japan, but more likely enter Kyushu and further south from the Korean peninsula; there are for example several records from Tsushima which lies between South Korea and Kyushu.

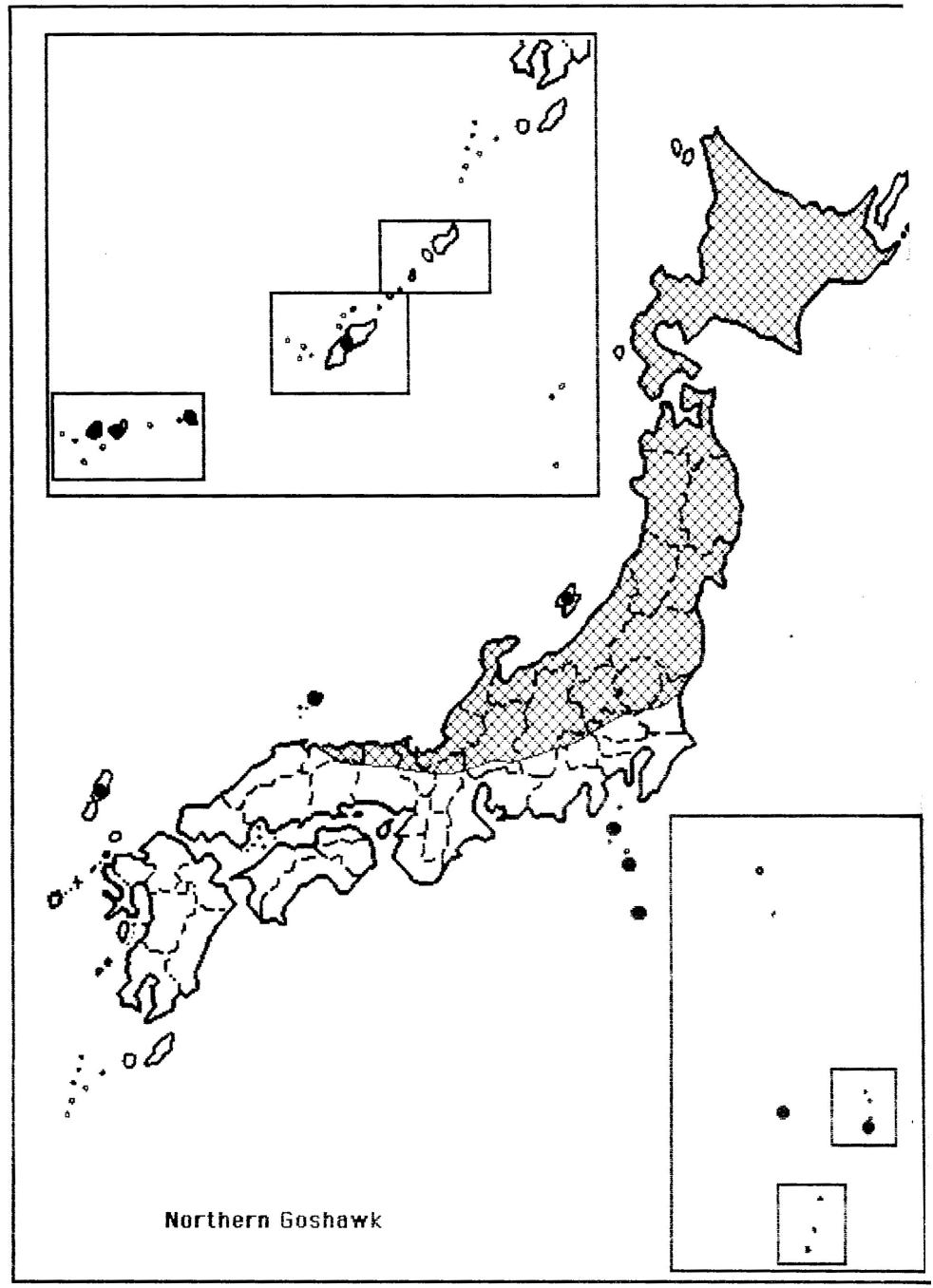
Prey: Both live prey and carrion are taken, but the main food is fish, particularly now the Alaskan Pollock *Theragra chalcogramma*, brought to the surface by the huge fishing fleet in the Nemuro Channel. In other areas it is dependent on *Hypomesus olidus* and *Eleginus gracilis* fisheries (Nakagawa *et al.* 1987), but swans, duck, gulls and seals are also taken. The most unusual record is of a bird on Torishima on 15 February 1930 feeding on Short-tailed (Steller's) Albatross (Yamashima 1942).

Voice: A gruff barking "kyow-kyow-kyow" or a strong "kra, kra, kra, kra" (Brazil 1986).

Subspecies: *H. p. pelagicus* (OSJ 1974).

6. Northern Goshawk *Accipiter gentilis* O-taka

Distribution: Three subspecies are recorded from Japan: *A. g. fujiyamae* from Honshu (breeding in Aomori-ken, Akita-ken, Miyagi-ken, Yamagata-ken, Fukushima-ken, Niigata-ken, Ibaraki-ken, Tochigi-ken, Gunma-ken, Nagano-ken, Yamanashi-ken, Shizuoka-ken, Aichi-ken, Mie-ken, Shiga-ken, Nara-ken and Tottori-ken) (WBSJ 1984) and also recorded from Sado, Oki, Shikoku, Kyushu, Tsushima, Oshima, Niijima, Miyake-jima, Hachijo-jima, Haha-jima, Nishinoshima, Okinawa, Miyako-jima, Ishigaki-jima and Iriomote-jima (OSJ 1974; Kohno & Shoyama 1982; McWhirter & Ikenaga in prep); *A. g. schvedowi* from Hokkaido (b) and Honshu (Niigata-ken, and Nagano-ken); and *A. g. albidus*, first recorded from Japan from 24


Northern Goshawk

November to 2 December 1979 in Hokkaido, and again on 10 February 1981, in Taiki, Tokachi district Hokkaido (Fujimoto 1980; Iijima 1983).

Status: Classified as a "Special Bird for Protection", its exact status is still not yet clear, with some authors considering it resident in both Hokkaido and Honshu (OSJ 1974), while others have suggested that northern birds disappear during winter (Austin & Kuroda 1953). It is probably not uncommon, breeding in both Honshu and Hokkaido, with some northern birds moving south in winter and probably being replaced by migrants which arrive from further north. It is certainly less widely recorded in winter in Hokkaido than in summer (Environment Agency 1988). Winter wanderers reach as far as Kyushu in some numbers, but are rare in the Izu and Ogasawara Islands, and the southernmost records are from Okinawa, Miyako-jima and the Yaeyama Islands between October and March (McWhirter & Ikenaga in prep.). Recent research by the Wild Bird Society of Japan has led to a minimum estimate of the breeding population at 300-480 individuals (WBSJ 1984).

Once prized for hawking, its nesting was encouraged and rigidly protected, but more recently, despite its classification as a "Special Bird for Protection" it has been persecuted for taking game, and poaching has increased to meet the demand caused by a resurgent interest in falconry and in stuffed birds for display.

Habitat: It occurs from sea-level to as high as nearly 2,300m in the Japan Alps, but is most frequently seen amongst forested hills and mountainsides (Austin & Kuroda 1953; OSJ 1974).

Breeding: Breeds during May and June, and, although usually silent, birds can be heard calling at this season. Nests are usually built in Red Pines and are used in consecutive years. The clutch consists of 2-4 eggs, with incubation lasting 35-41 days and fledging taking a further 36-43 days (Kiyosu 1965; Endo *et al.* 1984; Kuroda 1984).

Migration: Although most are resident, northern birds disappear during winter and are presumed to move southwards, although their movements have not been documented.

Prey: Pellet analysis has shown that they take various species of medium-sized birds including: *Bambusicola thoracica*, *Streptopelia orientalis*, *Columba livia*, *Turdus cardis* and *Garrulus glandarius*, and mammals such as *Sciurus lis* (Endo *et al.* 1984).

Voice: Usually silent but occasionally gives a sharp "ki, ki, ki" (Kiyosu 1965).

Subspecies: Three subspecies have been recorded: *A. g. fujiyamae* from Honshu, *A. g. schvedowi* from Hokkaido (where it has bred) and Honshu and

A. g. albidus, a vagrant. Most Japanese birds are *A. g. fujiyamae* (OSJ 1974).

7. Chinese Sparrowhawk *Accipiter soloensis* **Akaharadaka**

Distribution: The Chinese Sparrowhawk was first recorded from Japan from Torishima in October 1926 (OSJ 1974), then subsequently from Honshu (542km south of Cape Shiono, Wakayama-ken, in September 1971, and more recently from Ishikawa-ken and Aichi-ken); the Izu Islands; the Danjo Islands; Okinawa, Ishigaki-jima and Yonaguni-jima (OSJ 1974), and during the 1980s from western Kyushu: (Nagasaki-ken, Kagoshima-ken), Amami-oshima, Miyako-jima, Ishigaki-jima and Iriomote-jima (Kawaji *et al.* 1987; McWhirter & Ikenaga in prep).

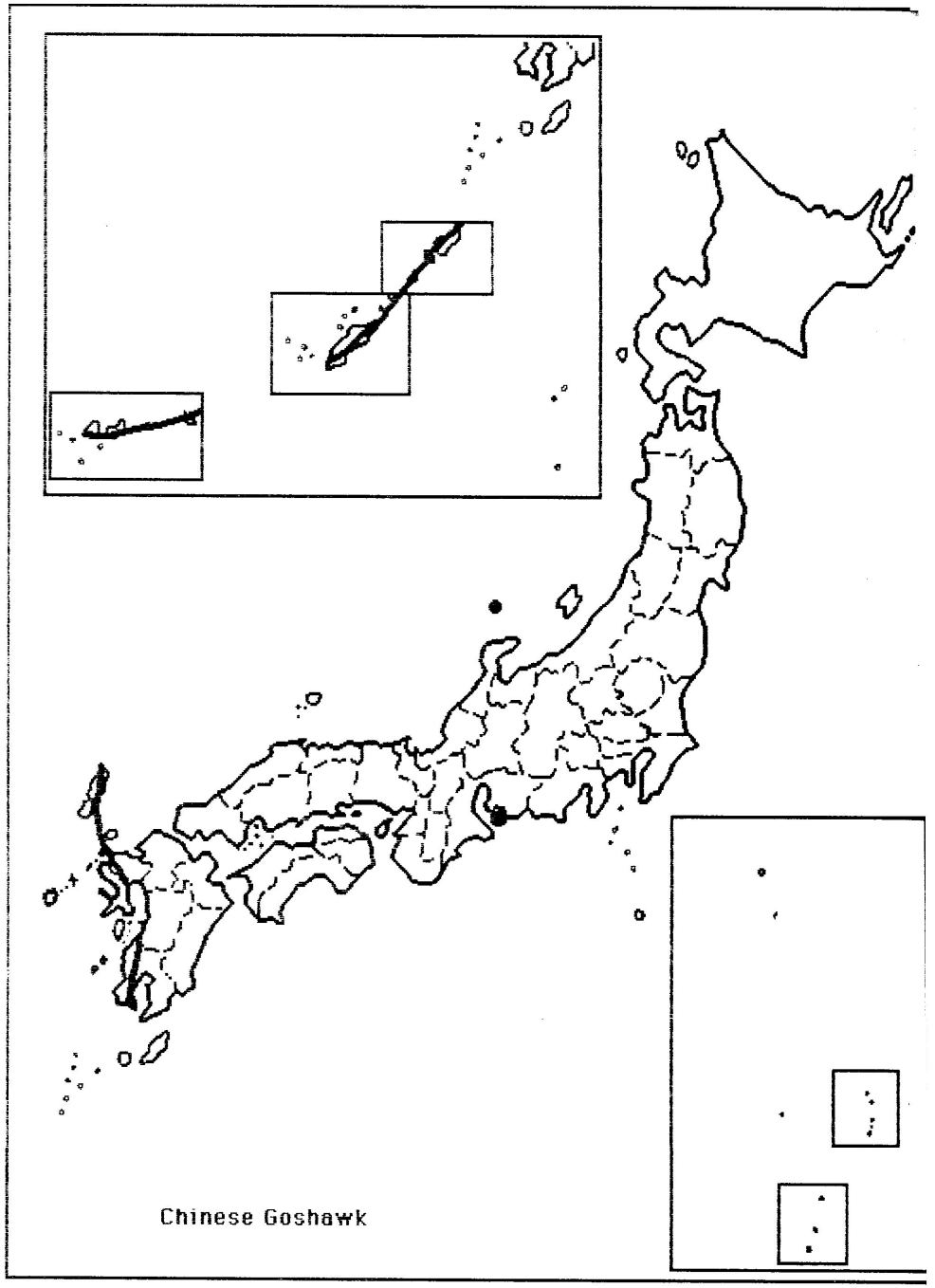
Status: Until very recently this species was considered a great rarity in Japan. It was not included at all by Austin & Kuroda (1953) and considered only as a straggler, chiefly to the Nansei Shoto, by OSJ (1974). In the early 1980s, however, studies particularly by Kugai and Ikenaga led to the discovery of a hitherto overlooked major flyway through Japan, passing through the Nansei Shoto and Western Kyushu.

Habitat: It favours wooded hills with rice paddies or wetlands according to OSJ (1974), but on migration through the Nansei Shoto is invariably seen roosting in, and soaring over, forested hills (Brazil pers. obs).

Migration: Birds are now known to migrate from the Korean Peninsula via western Kyushu and the Nansei Shoto island chain to Taiwan between early September and early October, with the peak in mid- to late September. They can be seen by the hundreds rising from the hilltop forest early in the morning and heading southwards, (e.g. 271 between 08.00 + 09.00 on 25 September 1984, in northern Okinawa; Brazil 1984), with more than 10,000 passing through Okinawa and Miyako-jima in a single autumn (Ikenaga pers. comm).

Since initial observations of the migration over Okinawa, birds have since been found also moving over western Kyushu, Amami-oshima in the northern Nansei Shoto, Miyako-jima and Iriomote-jima in the southern Nansei Shoto, although surprisingly even during peak migration it is uncommon on Iriomote-jima and has only been recorded once or twice on Ishigaki-jima (McWhirter & Ikenaga in prep). It is best watched for early in the morning in September and October (Okinawa Yacho no Kenyukai 1986). There is also a single winter record of a bird on Kadena Air Base, Okinawa, on 28 January 1986 (McWhirter & Ikenaga in prep).

The appearance of small numbers passing over Cape Irago, Aichi-ken (much further to the northeast), does not fit with the currently known migration pattern; these accidentals may be from Ussuri or further north. Spring migration has not yet been studied, although birds appear over Hegura-jima in spring, almost as far east of their known breeding grounds as


Chinese Goshawk

Irago. These could be birds overshooting peninsular Korea and continuing up the Japan Sea, or it could be an indication that small numbers breed further north.

Prey: Reported as feeding chiefly on frogs by OSJ (1974), however insects, particularly grasshoppers, probably form their main food in the Nansei Shoto.

Subspecies: Monotypic.

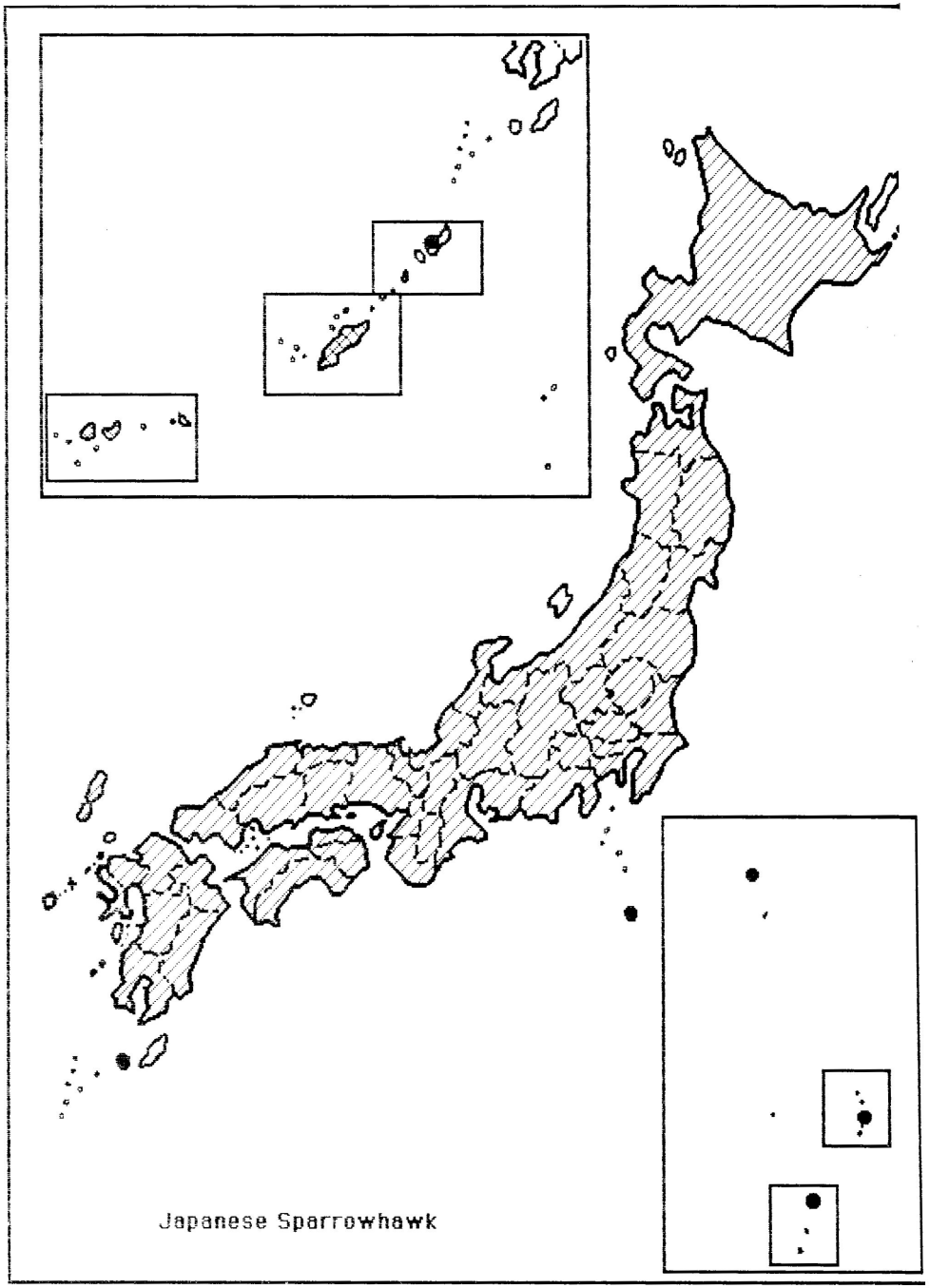
8. Japanese Sparrowhawk *Accipiter gularis* **Tsumi**

Distribution: The Japanese Sparrowhawk was first recorded from Japan by Temminck & Schlegel (1847). Two subspecies occur: *A. g. gularis* in Hokkaido (b); Honshu (Niigata-ken (b), Tochigi ken (b), Nagano-ken (b), Saitama-ken (b), Tokyo (b), and Wakayama-ken (b) Osaka-fu, and observed elsewhere); Sado, Oki, Shikoku (b); Kyushu (Kumamoto-ken (b)); Tsushima; Hachijo-jima, Torishima, Chichi-jima, Kita-iwo-jima; Yakushima, Amami-oshima, Okinawa, Ishigaki-jima, Iriomote-jima, and Minami-daito-jima (Kuroda 1925; OSJ 1974); and *A. g. iwasakii* in Okinawa (b), Ishigaki-jima (b) and Iriomote-jima (b) (Mishima 1962; OSJ 1974; Morioka *in litt.*).

Status: A rather inconspicuous, secretive, forest accipiter. Austin & Kuroda (1953) knew virtually nothing of its breeding distribution, and it remains relatively poorly known in Japan even today. It is an uncommon summer visitor to most of Japan from Hokkaido south to southern Honshu and probably Kyushu, arriving in April (although a bird was at Sayama-ko, near Tokyo on 2 March 1982; Brazil 1982a) and remaining until September, although a few remain to winter, or northern birds move in to winter, in central Honshu (OSJ 1974; Brazil pers. obs.). It migrates through the Nansei Shoto and stragglers have reached the Ogasawara and Iwo Islands. Subspecies *A. g. iwasakii* is resident in the Nansei Shoto, breeding from Okinawa south to Iriomote-jima.

Habitat: It prefers montane deciduous and mixed forest, up to sub-alpine mixed woods in summer (OSJ 1974), while southern *A. g. iwasakii* inhabits sub-tropical evergreen forest.

Breeding: First proven to breed in Japan only as recently as 1954 at an altitude of 800m in Shizuoka-ken (Takada 1956). Breeding records have increasingly come to light with several each year even in residential areas, for example in Tokyo since 1981 (Suzuki *in litt.*), and recently also in Utsunomiya, Tochigi-ken (Hirano *et al.* 1988). The breeding season is during May and June; the nest is built of twigs 10-15m up in a pine tree, close to the trunk. The clutch is of 2-5 eggs, with incubation taking 25-28 days and with young fledging in June (Kuroda 1984). During the breeding season it can be quite vocal, giving "kie kie...." calls (Suzuki *in litt.*).


Japanese Sparrowhawk

Prey: Mainly small woodland birds, including: *Muscicapa latirostris*, *Aegithalos caudatus*, *Parus varius*, *Cyanopica cyane*, *Sturnus cineraceus*, *Carduelis sinica* and *Emberiza cioides*, and small mammals, such as the voles *Clethrionomys rufocanus*, *C. andersoni* and *Crocidura dsi-nexumi*. Also small reptiles and various insects (Ikeda 1956; Suzuki *in litt.*).

Subspecies: *A. g. gularis* breeds from Hokkaido south to Kyushu and the northern Nansei Shoto, and migrates through the southern Nansei Shoto. *A. g. iwasakii* is resident in Okinawa (Morioka *in litt.*), Ishigaki and Iriomote Islands in the southern Nansei Shoto (OSJ 1974).

9. Northern Sparrowhawk *Accipiter nisus* Haitaka

Distribution: Two subspecies of the Northern Sparrowhawk are known from Japan: *A. n. nisosimilis* from Hokkaido (b); Honshu (b); Sado, Oki, Shikoku; Kyushu; Tsushima; Oshima, Niijima, Miyake-jima, Hachijo-jima; Tanegashima, Yakushima, Okinawa, Miyako-jima, Iriomote-jima and Minami-daito-jima (OSJ 1974; Kohno & Shoyama 1982; Hanawa 1984; McWhirter & Ikenaga in prep.), and *A. n. pallens* from Kamchatka, first recorded from Japan in Ibaraki-ken in January 1892 and subsequently from: Hokkaido (December 1938, November 1956), Miyagi-ken, Saitama-ken (November 1941), and Niijima in the Izu Islands (Mishima 1960; OSJ 1974).

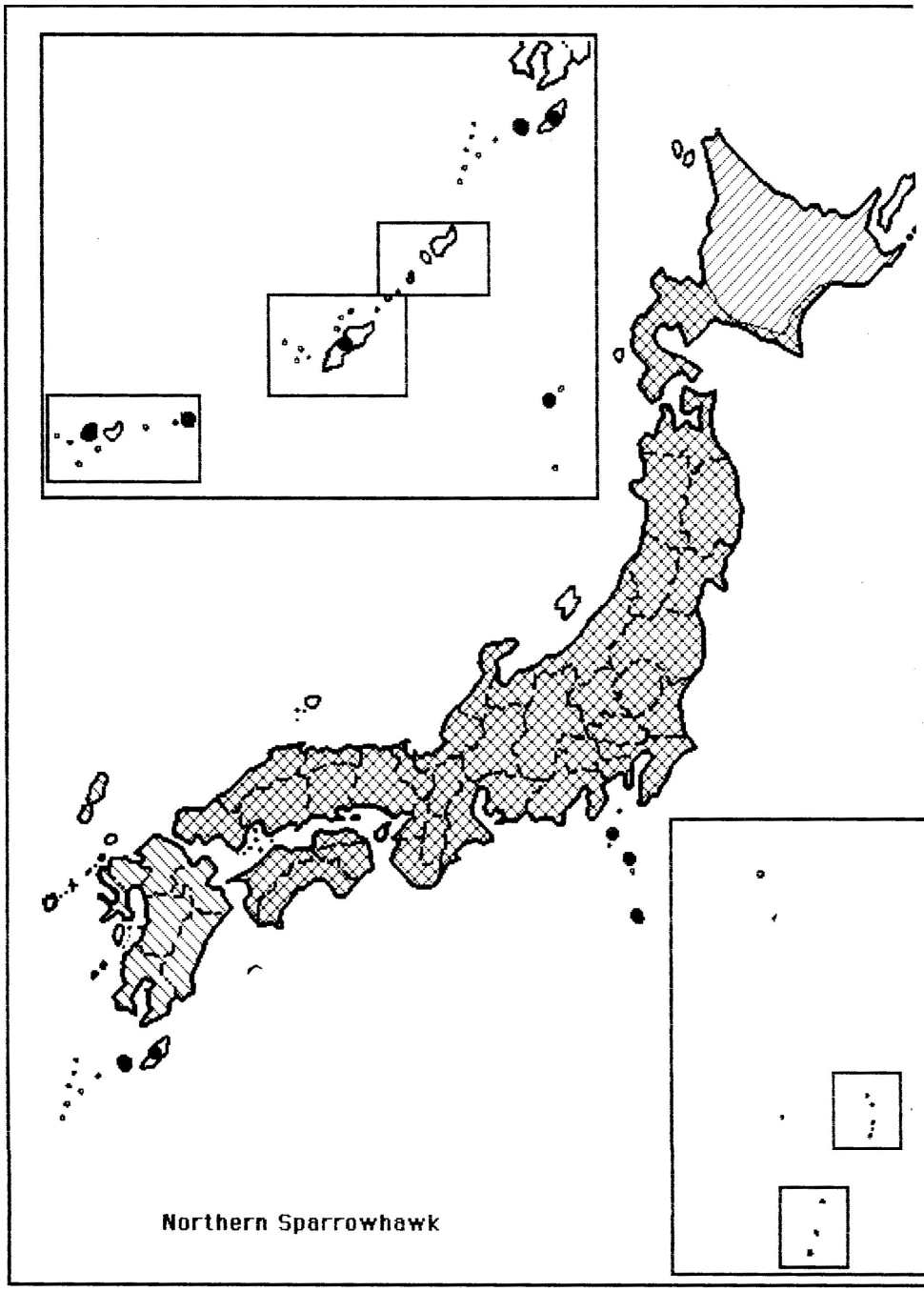
Status: A fairly common resident and winter wanderer in Honshu, Shikoku and Kyushu, visiting islands further south in winter (OSJ 1974). In Hokkaido it is a summer visitor from April to October and a scarce resident there, or birds from further north move in during winter (Whitely 1867; Fujimaki *et al.* 1975).

Prior to 1974 it had only been recorded from Tanegashima and the Daito Islands south of Kyushu; however it is now clear that it is an uncommon but regular autumn migrant and winter visitor from September to December in the Nansei Shoto from Okinawa to the Yaeyama Islands (McWhirter & Ikenaga in prep.).

Habitat: It breeds in mountain forests, usually between 600-1,500m, but has been observed in summer at up to 2,400m in the sub-alpine forest zone in the Japan Alps of Honshu (Austin & Kuroda 1953; OSJ 1974; Kuroda 1984), and in the lowlands in Hokkaido (Brazil pers. obs.). It typically descends to lowlands in autumn and winter, hunting along forest edges and in sparsely wooded areas (Austin & Kuroda 1953).

Breeding: The breeding season is from April to July. The nest is typically built 3.5-7.5m up in a pine, cedar or larch. The clutch is of 4-5 eggs, incubation lasts 31-33 days, and fledging a further 24-30 days (Austin & Kuroda 1953; Kuroda 1984).

Prey: Northern Sparrowhawks in Japan take primarily small woodland


Northern Sparrowhawk

and woodland edge birds (such as: *Motacilla* sp., *Phoenicurus auroreus*, *Turdus naumanni*, *Parus varius*, *P. major* and *Emberiza rustica*) (49%), insects (41%), and rodents (9%) (Ikeda 1956).

Migration: Although migration routes have not been documented for this species, it occurs in quite large numbers over Cape Irago in autumn and probably follows routes similar to those of *Butastur indicus*.

Voice: The alarm call during the breeding season is "Kya, kya, kya" (Kiyosu 1965).

Subspecies: *A.n. nisosimilis* breeds from Hokkaido south to Kyushu, while *A.n. pallens* from Kamchatka has been recorded as a straggler.

10. Rough-legged Buzzard *Buteo lagopus* **Keashi-nosuri**

Distribution: The Rough-legged Buzzard has been recorded from Hokkaido; Honshu (Aomori-ken, Yamagata-ken (1912 and 9 January 1922), Miyagi-ken (7 December 1954; Tachibana 1955), Niigata-ken, Nagano-ken (14 March 1918), Chiba-ken (Gyotoku in late 1970) Saitama-ken, Ishikawa-ken; Kyushu (Fukuoka-ken) (but not Shikoku); Tsushima; Iheya-jima (3-5 February 1984), Okinawa (30 January 1987), Senaga-jima (31 January and 1 February 1987), Miyako-jima and Ishigaki-jima (Austin & Kuroda 1953; OSJ 1974; Suzuki *in litt.*; McWhirter & Ikenaga in prep.).

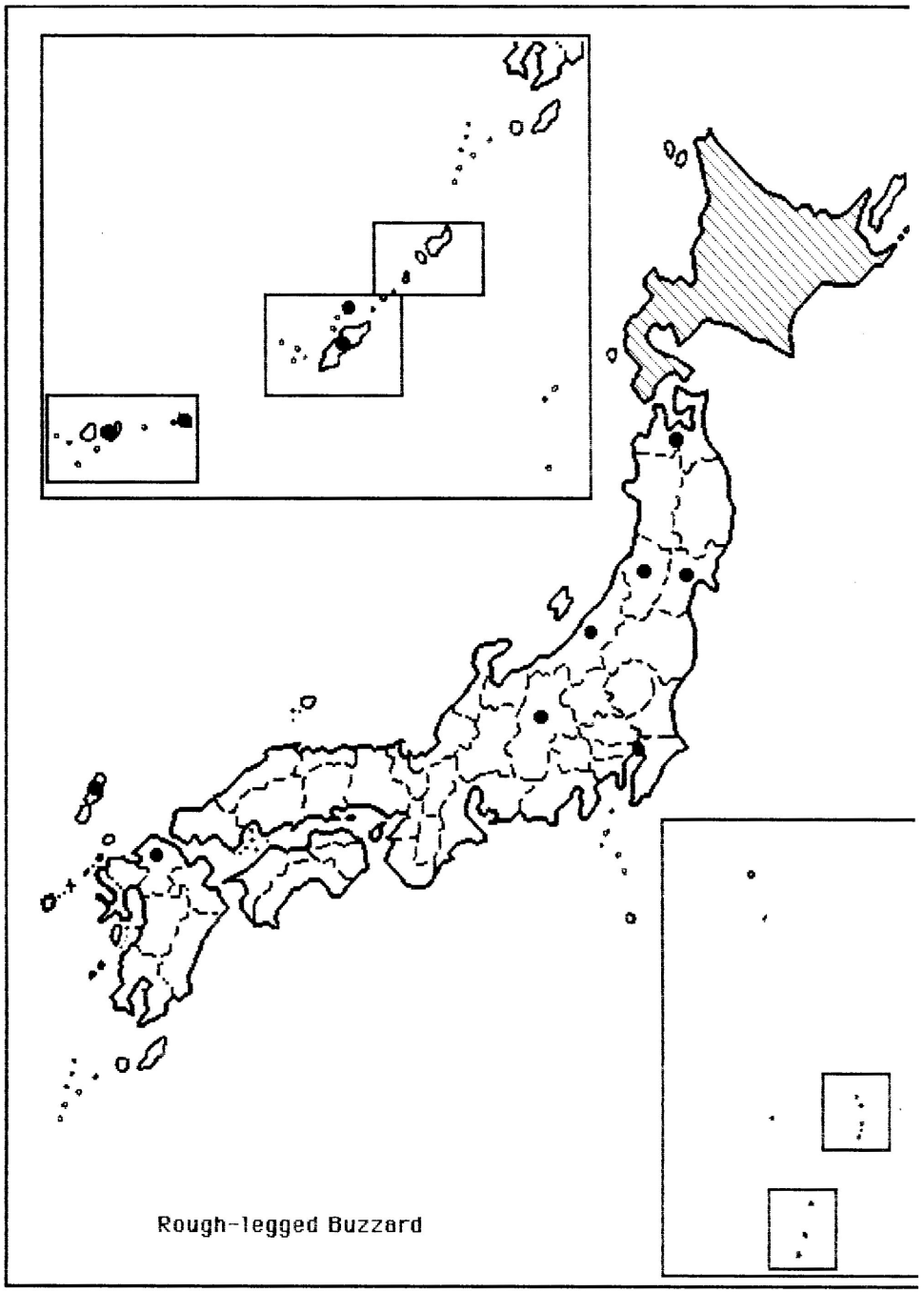
Status: Seebohm (1890) knew of it as a rare winter visitor at Hakodate in southwest Hokkaido, south of which it had not at that time been recorded (Seebohm 1884). It is now known to be a regular but uncommon winter visitor mainly to coastal Hokkaido, occurring annually in very small numbers at capes Ochiishi, Kiritappu, and Nosappu in eastern, and at Sarobetsu in northern, Hokkaido (Takada pers. comm.), and has been seen as far south as at Cape Erimo, the southern tip of Hokkaido (Hanawa *in litt.*). Very occasionally, in invasion years, it can be relatively common at these sites, as in winter 1988/1989 (Brazil pers. obs.). South of Hokkaido it is a rare straggler, which had been recorded only three times in Honshu prior to 1953, but which has also straggled as far south as the southern Nansei Shoto.

Habitat: It occurs most frequently at capes, along coastal hills, coastal grasslands and forested lake shores.

Prey: Reported to feed on hares, rodents and small birds by Kiyosu (1965).

Voice: A low "pyo" given in flight (Kiyosu 1965).

Subspecies: All records have so far been of *B. l. menzbieri* (Morioka *in litt.*), although *B. l. kamtschatkensis*, which breeds as close to Hokkaido as in the northern Kurile Islands, could conceivably occur.


Rough-legged Buzzard

11. Upland Buzzard *Buteo hemilasius* **O-nosuri**

Distribution: The type specimen of the Upland Buzzard was taken near Nagasaki, Kyushu in 1844 by the Siebold Expedition (Temminck & Schlegel 1847), but the species was not recorded in Japan again prior to 1922 (Seebohm 1890a; Kuroda 1922). It has since been reported from Honshu (Niigata-ken, Toyama-ken, Gifu-ken, Shimane-ken, Yamaguchi-ken); Kyushu (Nagasaki-ken and Kagoshima-ken (first record, at Izumi from 12 January 1986); Tsushima; and Okinawa (Kuroda 1922; Kawaji *et al.* 1987; McWhirter & Ikenaga in prep.).

Status: An accidental visitor to Japan, but one which has now occurred more than 10 times, from Niigata-ken in northern Honshu to Okinawa in the Nansei Shoto. It occurs usually in winter and most often in the south, particularly Kyushu, over open agricultural land in the lowlands. It has on several occasions remained for long periods, for example in Yamaguchi-ken from 12 December 1983 to 1 April 1984, in Kagoshima-ken in winter 1985/86, Toyama-ken from 18 December 1987 to 5 February 1988, and in Shimane-ken from 21 December 1986 to 22 March 1987 (WBSJ 1987, 1988). The northernmost and southernmost records, however, were of spring birds, presumably returning migrants: on Awashima in Niigata-ken on 18 May 1986 (Fujinami in Hale *in litt.*), and at Katsuren Castle, Okinawa, 16-21 March 1981, and Cape Hedo, Okinawa, on 28 April 1983 (McWhirter & Ikenaga in prep.). It has also occurred once in summer, 28-29 June 1987, in Ishikawa-ken.

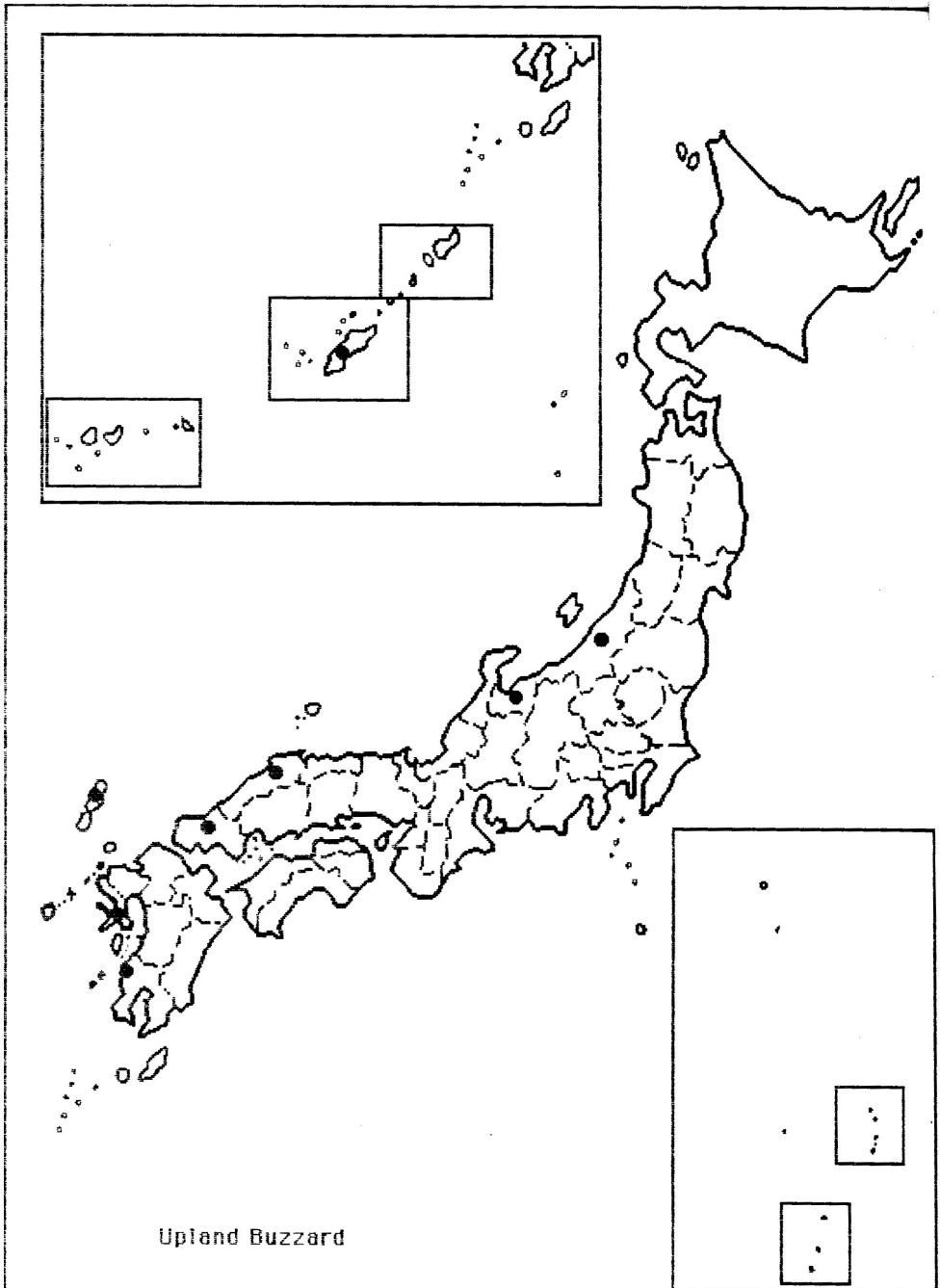
Habitat: Grassland slopes and plateaux (OSJ 1974).

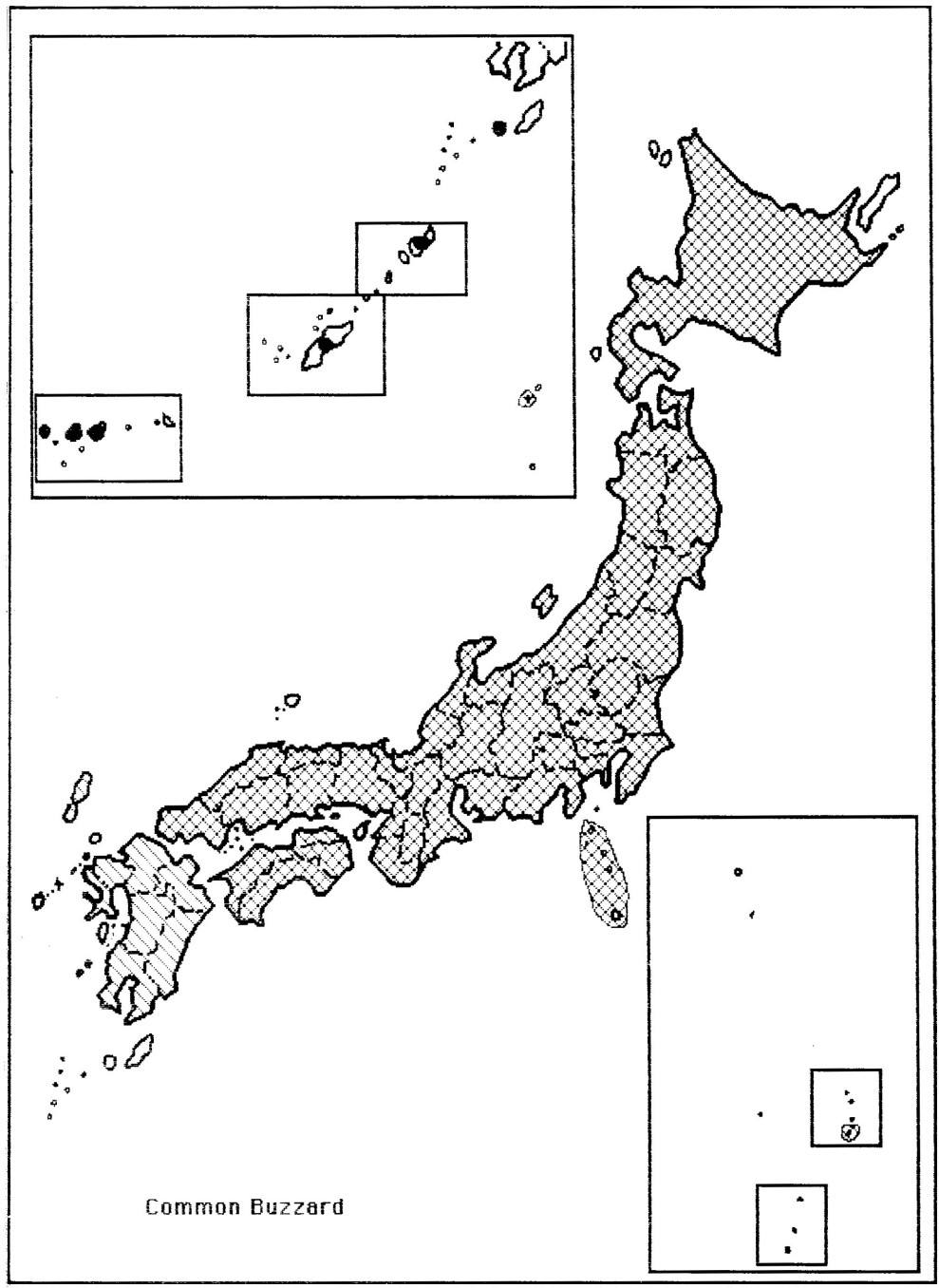
Migration: The distribution of records suggest that birds arrive via the Korean peninsula.

Subspecies: Monotypic.

12. Common Buzzard *Buteo buteo* **Nosuri**

Distribution: Three subspecies breed in Japan (Momiyama 1927; Kuroda 1971; OSJ 1974): *B.b. japonicus* was first described from Kyushu by Temminck & Schlegel (1847) and subsequently recorded from: Hokkaido (b); Honshu (b); Sado (b), Shikoku (b); Kyushu; Tsushima; Oshima (b), Niijima (b), Kozu-shima (b), Miyake-jima (b), Mikura-jima (b), Hachijo-jima (b); Yakushima, Amami-oshima, Okinawa, Ishigaki-jima, Iriomote-jima and Yonaguni-jima (OSJ 1974; Kohno & Shoyama 1982; Hanawa 1984; McWhirter & Ikenaga in prep.). *B.b. toyoshimai*, of the Ogasawara (Bonin) Islands, (Momiyama 1927), a 'National Monument' and a "Special Bird for Protection" (Enviroment Agency 1976), is uncommon and restricted to Chichi-jima, Haha-jima and some smaller islands; and *B.b. oshiroi*, first described from the Daito Islands in 1964, is restricted just to Minami-daito-jima (Kuroda 1971).


Upland Buzzard


Common Buzzard

Status: A fairly common resident of lowlands and foothills in Honshu and Shikoku and occurring in Kyushu and the Nansei Shoto on migration (OSJ 1974). It is essentially a summer visitor to Hokkaido (Seebohm 1890a), from April, rarely March, to October with concentrations of up to 10 together occurring in late winter in southwest Hokkaido, e.g. on 1 March 1972 (Koyama in Fujimaki & Matsuoka 1972), but also occurs as a rarity in winter in Hokkaido (Brazil pers. obs.; Hanawa *in litt.*) e.g. at Cape Ochiishi, on 19 March 1980 (Martins 1980), and at Cape Nosappu on 19 February 1985 (Buck 1985). Birds wandering in winter reach as far as the Nansei Shoto, and Holst found it on Chichi-jima, in the Ogasawara Islands (Seebohm 1890b), but it is unclear whether this refers to an accidental *B.b. japonicus* or to the endemic *B.b. toyoshimai*. The southernmost Japanese records are in fact from Okinawa to the Yaeyama Islands in March and April, and in November and December (McWhirter & Ikenaga in prep.).

Habitat: It occurs in woodlands on hills and low mountains, rarely above 1,300m; over open grassland, agricultural land; and also visits large wooded city parks in winter (Austin & Kuroda 1953; OSJ 1974).

Breeding: In Honshu it nests from April to July at altitudes between 600-1,200m. The nest is usually built 6-9m up in a pine. The clutch of 2-3, rarely 4, eggs, is laid in late April or early May, with incubation taking 28-33 days, and most young leaving the nest in the first half of July after a fledging period of 32-42 days (Kiyosu 1965; Kojima 1987).

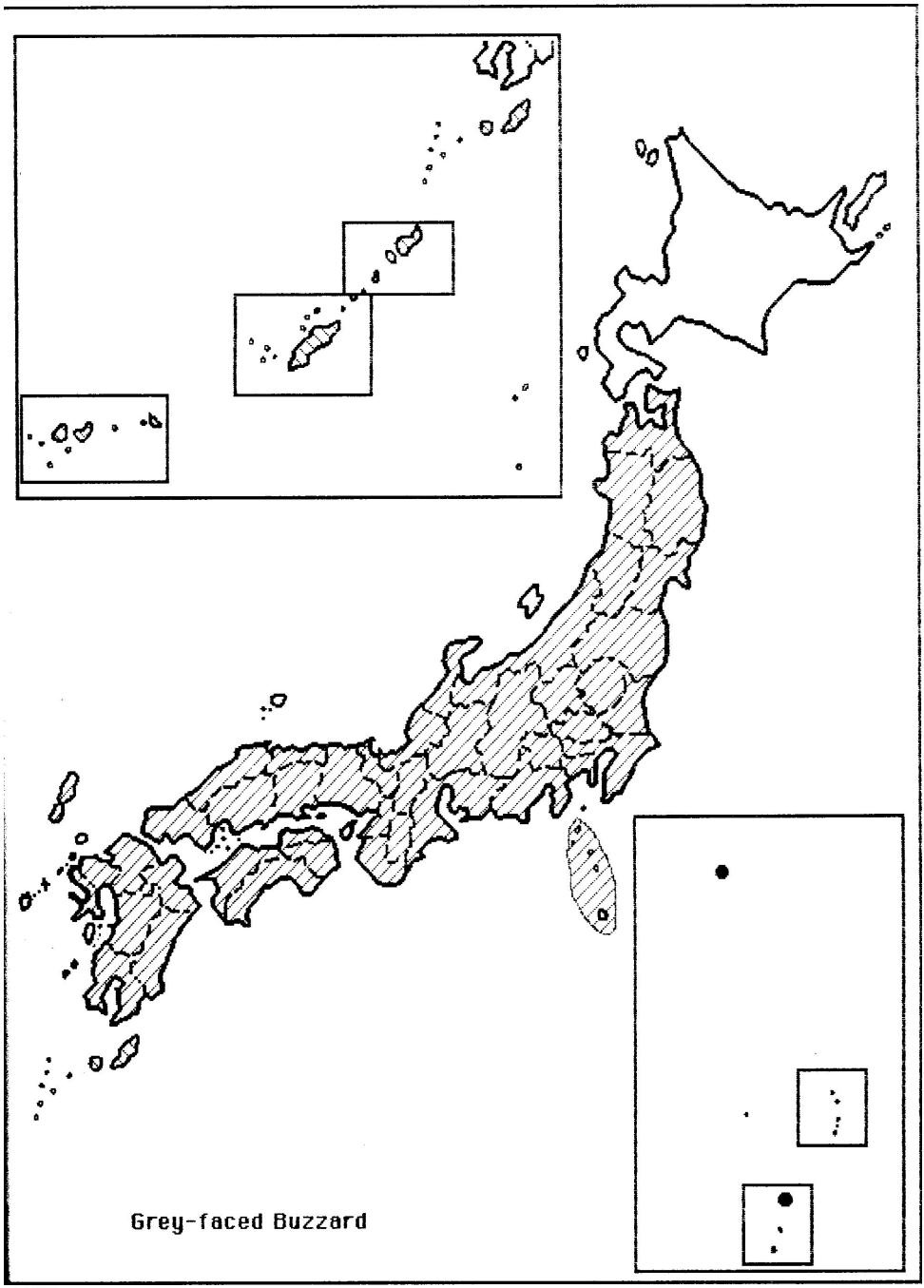
Migration: Some birds from Hokkaido (or possibly from further north) migrate south through southwest Hokkaido in autumn (Brazil pers. obs.), and are recorded as crossing the Tsugaru straits from the Muroran peninsula in Hokkaido to Cape Tappi at the tip of the Tsugaru peninsula in Aomori prefecture (Morishita 1986).

Prey: A wide variety of mammals, ranging in size from hares *Lepus* sp. to small mammals such as *Microtus montebelli* and the mole *Mogera wogura*, and birds from the size of pheasant down, also reptiles including snakes. But insects (particularly locusts) make up the largest proportion of the diet (43.5%), followed by rodents (27.9%) and amphibians, especially frogs (22.3%) (Ikeda 1956), although *B.b. toyoshimai* of the Ogasawara Islands seems to feed primarily on lizards (Ueda & de Forest 1988).

Subspecies: *B.b. japonicus*, *B.b. toyoshimai* and *B.b. oshiroi*.

13. Grey-faced Buzzard *Butastur indicus* Sashiba

Distribution: The Grey-faced Buzzard has been recorded in: Honshu (b); Sado (b), Shikoku (b); Tsushima, Kyushu (b); Oshima (b), Toshima, Niijima, Kozu-shima, Miyake-jima (b), Mikura-jima (b), Hachijo-jima (b), Torishima (17 April 1958; Aranoff 1960), Kita-iwo-jima; Tanegashima, Yakushima, Amami-oshima, Tokunoshima, Yoron-jima, Okinawa, Miyako-jima,


Grey-faced Buzzard

Ishigaki-jima, Iriomote-jima, Taketomi-jima, Kuro-jima, Yonakuni-jima, and Minami-daito (Kuroda 1925; OSJ 1974).

Status: A not uncommon summer visitor north to central Honshu and southern Tohoku, it breeds north to Yamagata-ken and Iwate-ken. It arrives in central Honshu generally in late April or early May (although early spring migrants arrive on Miyake-jima as early as 12 April (Moyer 1957)), and depart in mid- to late September (Nakamura 1953). Considerable numbers of birds remain to winter on Amani-oshima, Okinawa and the Yaeyama Islands every year, and the rare dark phase has been observed there (Brazil pers. obs.).

Habitat: Occurs in wooded hills and low mountains in warmer regions, preferring mixed deciduous forests with conifers, cryptomerias and cypress for nesting in (OSJ 1974; Kojima 1982). Kojima (1982) showed that they perch almost exclusively in conifers (preferring dead to live trees), particularly *Pinus densiflora,* although they will also use *P. thunbergii, Cryptomeria japonica* and *Chamaecyparis obtusa.*

Breeding: The breeding season is from May to July. The nest is built 4.5-14m up in an evergreen (Austin & Kuroda 1953; Moyer 1957). The clutch is of 2-4 eggs, incubation takes 28-30 days and fledging 34-36 days (Yamashina 1982; Kuroda 1985).

Migration: This is a markedly migratory species, with short movements observed locally from Tohoku southwards; in addition a major migration route has been identified inland along the Pacific coast from Kanagawa-ken westwards, with great concentrations over Cape Irago in Aichi-ken, where it is the commonest raptor from late September to mid-October, peaking in early October (Brazil 1987a), across the Naruto channel from the Kii Peninsula to Shikoku, and either through Shikoku to the east Kyushu coastal route, or along the north shore of the Inland Sea and thence to the west Kyushu route. The migration becomes highly concentrated as birds leave Kyushu, especially from Cape Sata, the southernmost tip (Udagawa 1953). From mid-September to mid-October birds start moving down from the highlands of Honshu, reaching southern Kyushu and Yakushima by early October when they are so concentrated as to occur in tens of thousands and their gathering at staging post roost sites is known locally as the 'descent of the hawks' (taka-kudari) (Austin & Kuroda 1953). In central Honshu birds have been found migrating over both land and sea; the latter, since they were noted soaring to gain height over headlands, presumably taking short cuts across bays rather than sticking to the coast line (Kamakura Jisyu Tanchoukai Group 1988). In the autumn, when birds are *en route* to Taiwan and the Philippines, they head southwest from Kyushu down the Nansei Shoto chain, via Amami-oshima, Okinawa, Miyako-jima (a staging post where large numbers roost) and the Yaeyama islands to Taiwan (Morishita 1986). They also occur in the Nansei Shoto on spring migration at the

beginning of April but numbers are far less than in autumn (Udagawa 1953), the birds being far less concentrated or, so far, overlooked.

Voice: Highly vocal in spring, prior to breeding, but also calls throughout the year, including winter. The call is a peevish, whistled, "whick-awee" (Moyer 1957); "kin-mie, kin-mie" (Takano 1982), or "pik-wee, pik-wee" (Brazil pers. obs.).

Subspecies: Monotypic.

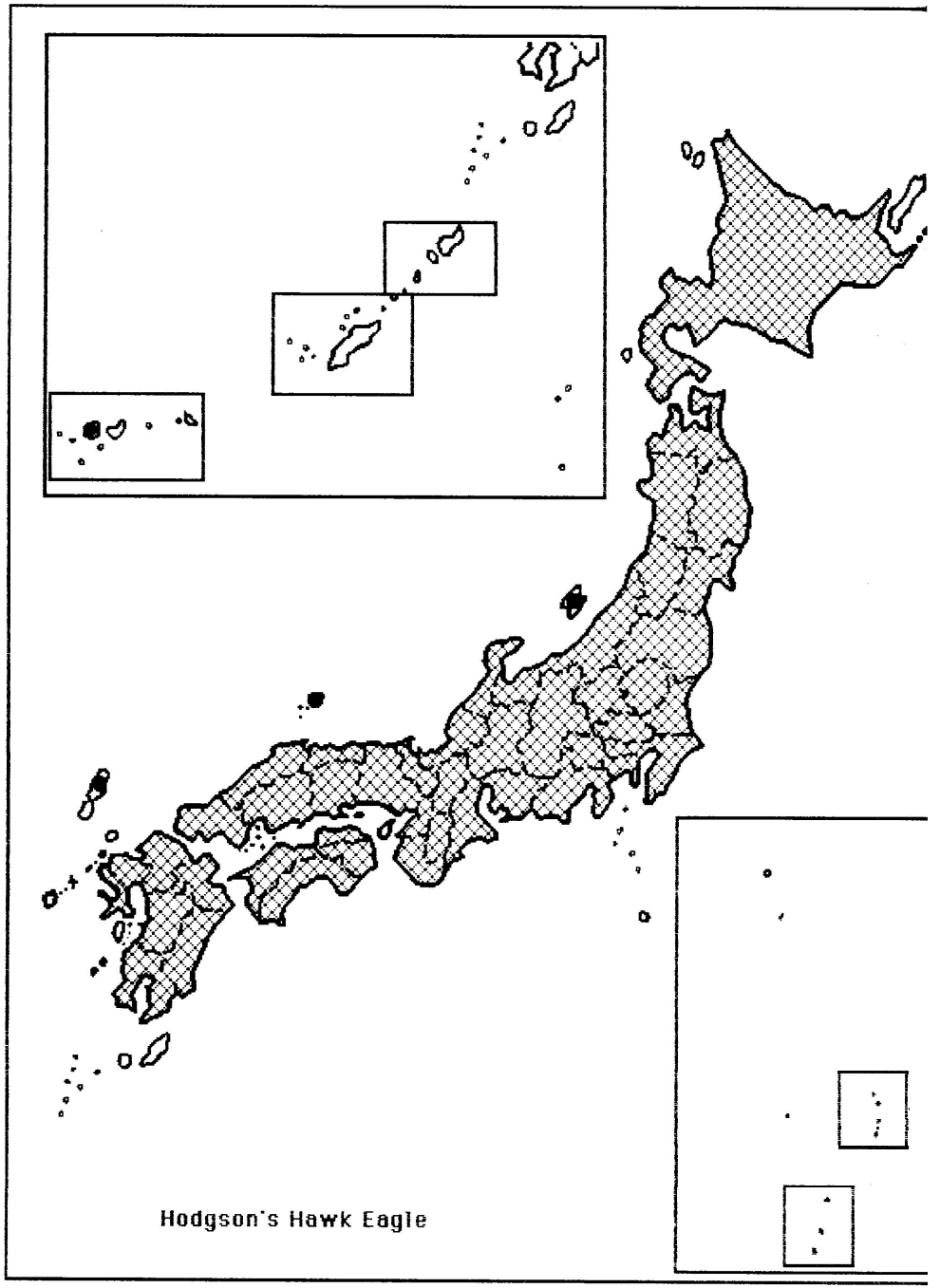
14. Hodgson's or Mountain Hawk Eagle *Spizaetus nipalensis* Kuma-taka

Distribution: Hodgson's Hawk Eagle has been recorded from: Hokkaido (b) (southern districts of Hokkaido from the east to the west coasts); Honshu (Aomori-ken (b), Akita-ken (b), Iwate-ken (b), Fukushima-ken (b), Niigata-ken (b), Tochigi-ken (b), Kanagawa-ken (b), Nagano-ken (b), Yamanashi-ken (b), Shizuoka-ken (b), Aichi-ken (b), Shiga-ken (b), Kyoto-fu (b), Fukui-ken (b), Nara-ken (b), Wakayama-ken (b), Hyogo-ken (b), Okayama-ken (b), Tottori-ken (b)); Shikoku (Ehime-ken (b)); Kyushu (Oita-ken (b), Miyazaki-ken (b), Kagoshima-ken (b)); Sado, Oki, Tsushima, and the southernmost record, once from Iriomote-jima during 1973 (OSJ 1974; WBSY 1982; Watanabe *et al.* 1984; WBSJ 1984; Yamada *et al.* 1984; McWhirter & Ikenaga in prep.).

Status: A very uncommon resident with an estimated population of no more than 900-1,000 birds and classified as a "Special Bird for Protection" by the Cultural Agency (WBSJ 1984a). It was considered only to wander to Hokkaido in winter by Seebohm (1890a), but is now known to breed in southern districts, and from Aomori-ken in northern Honshu to western Honshu, and Kyushu. It is not uncommon in the Japan Alps, in Shikoku and in eastern and southern Kyushu (Watanabe *et al.* 1984; WBSJ 1984; Yamada *et al.* 1984). It is usually found above 1,200m except in winter when it moves to lower altitudes. Apart from these movements it is presumed to be non-migratory, although some wandering must occur for a bird to have reached as far as Iriomote-jima in the Yaeyama Islands in 1973 (WBSY 1982). Birds even remain in Hokkaido during winter, where they have been observed in October e.g. at Utonai-ko, west Hokkaido (Fujimaki & Matsuoka 1972) and in December and February in central and eastern Hokkaido (Brazil pers. obs.).

Habitat: Restricted mainly to fairly remote mountainous regions, where it occurs over the mid-slopes from 250-600m (Nishigaito *et al.* 1971). It prefers mixed forests, but generally nests in conifers up to nearly 1,500m in the Japan Alps (Kiyosu 1936). In Hokkaido it occurs more commonly in mixed forests at lower altitudes.

Breeding: The breeding season begins as early as late January and early February, and continues through April (Nishigaito *et al.* 1971). The clutch


Hodgson's Hawk Eagle

consists of 1-3 eggs; incubation lasts 28-40 days, but the fledging period is not known (Kiyosu 1936, 1965; Yamashina 1982; Kuroda 1984).

Migration: Presumably non-migratory.

Prey: A wide variety of fairly large montane forest prey including: the pheasant *Syrmaticus soemmerringii*, mammals including the hare *Lepus brachyurus*, and dormouse *Glirulus japonicus*, and the snake *Elaphe climacophora* (Inoue 1985, reported to the OSJ annual meeting).

Voice: It is usually silent but occasionally gives whistled "pie-pie-pie" or "pipipi..." calls during the breeding season (Kiyosu 1965).

Subspecies: *S.n. orientalis* (OSJ 1974).

15. Greater Spotted Eagle *Aquila clanga* **Karafuto-washi**

Distribution: The first record of a Greater Spotted Eagle was from Kanagawa-ken, Honshu, on 21 December 1952; it was then reported from: Hokkaido (on the Shiretoko Peninsula in 1979); from Honshu (Miyagi-ken, on 25 January 1973, Niigata-ken on 12 February 1984); Okinawa in November 1968, Irabu-jima in September 1984, and most recently on Yonaguni-jima in November 1987 (Mishima 1956; Takara & Kuroda 1969; OSJ 1974; Mori & Nakagawa 1981; Kazama 1984, 1985; Okinawa Yacho Kenkyukai 1986; McWhirter & Ikenaga in prep.; Ikenaga pers. comm.).

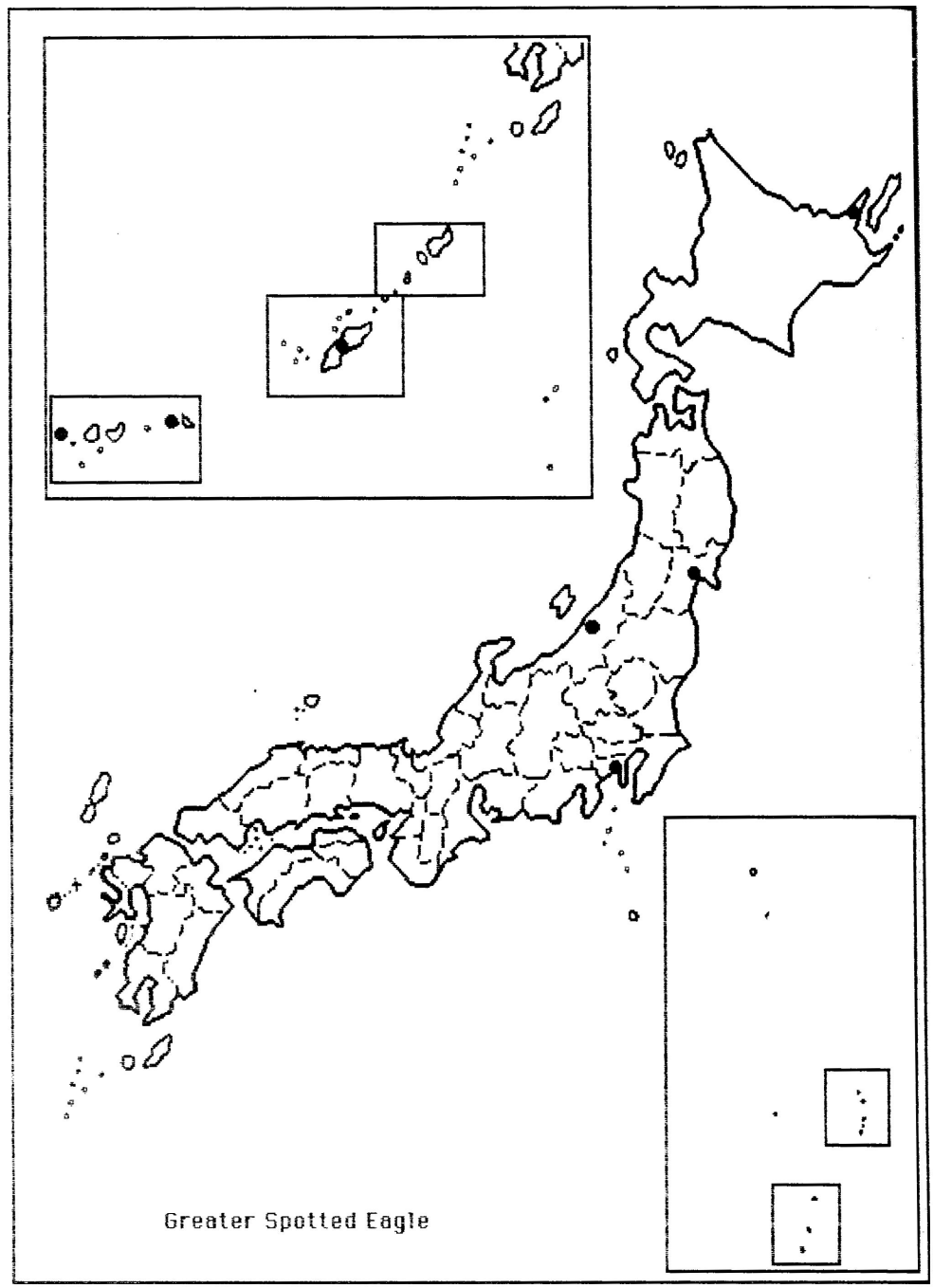
Status: An accidental to Japan, only recorded seven times, three times from Honshu, once from northeast Hokkaido, and three times from the Nansei Shoto. Each occasion has been in autumn or winter, the earliest in September and the latest on 12 February.

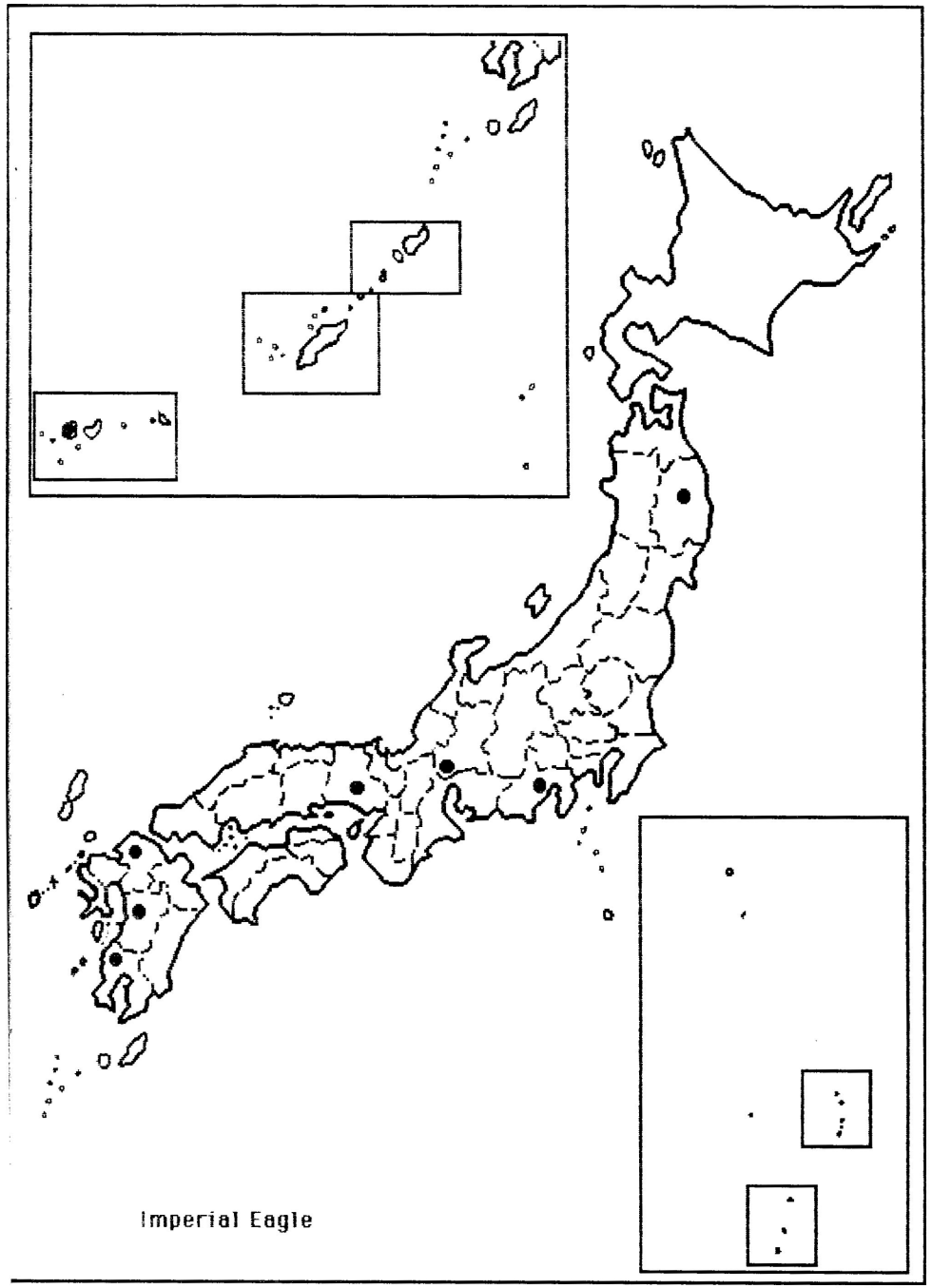
Habitat: Open country in the vicinity of forests, marshes and rivers (OSJ 1974).

16. Imperial Eagle *Aquila heliaca* **Katashiro-washi**

Distribution: The Imperial Eagle was first recorded in Iwate-ken some time before 1953, next at Iriomote-jima on 13 August 1967, and subsequently from: Honshu (Iwate-ken and Hyogo-ken in 1968, 1969, 1972, 1974 and 1975 but not clear which year in which prefecture (Kuroda 1984)), Shizuoka-ken, at Oi-gawa, from 23 January to 9 February 1969, 14 January 1971, from 27 January to 3 February 1985 and from before 28 December 1985 into February 1986, and Gifu-ken, at Ibi-gawa, on 24 March 1985 (WBSJ Yacho Kiroku Iinkai 1986); Kyushu (Fukuoka-ken 1979, Kumamoto-ken 1975, Kagoshima-ken 1978, 1979); and Iriomote-jima 1967 (Takara & Kuroda 1969; Kuroda 1984; Okinawa Yacho Kenkyukai 1986; Kawaji *et al.* 1987; Kawada *in litt.*; Brazil 1985/1986).

Status: An accidental in autumn and winter recorded at least seventeen


Greater Spotted Eagle


Imperial Eagle

times, mainly from Honshu, but also from Kyushu and once from the Nansei Shoto. Several records may involve the same individuals returning to the same site in subsequent winters. Most records are between December and February, but it has been seen as early as August and as late as March.

Habitat: Has occurred in wooded lowlands with marshes or large rivers.

Prey: The individual wintering at Oi-gawa, Shizuoka-ken, in 1986 was observed to be preying on duck (*Anas* sp.) wintering on the river (Brazil pers. obs.).

Subspecies: *A.h. heliaca* (OSJ 1974).

17. Golden Eagle *Aquila chrysaetos* **Inu-washi**

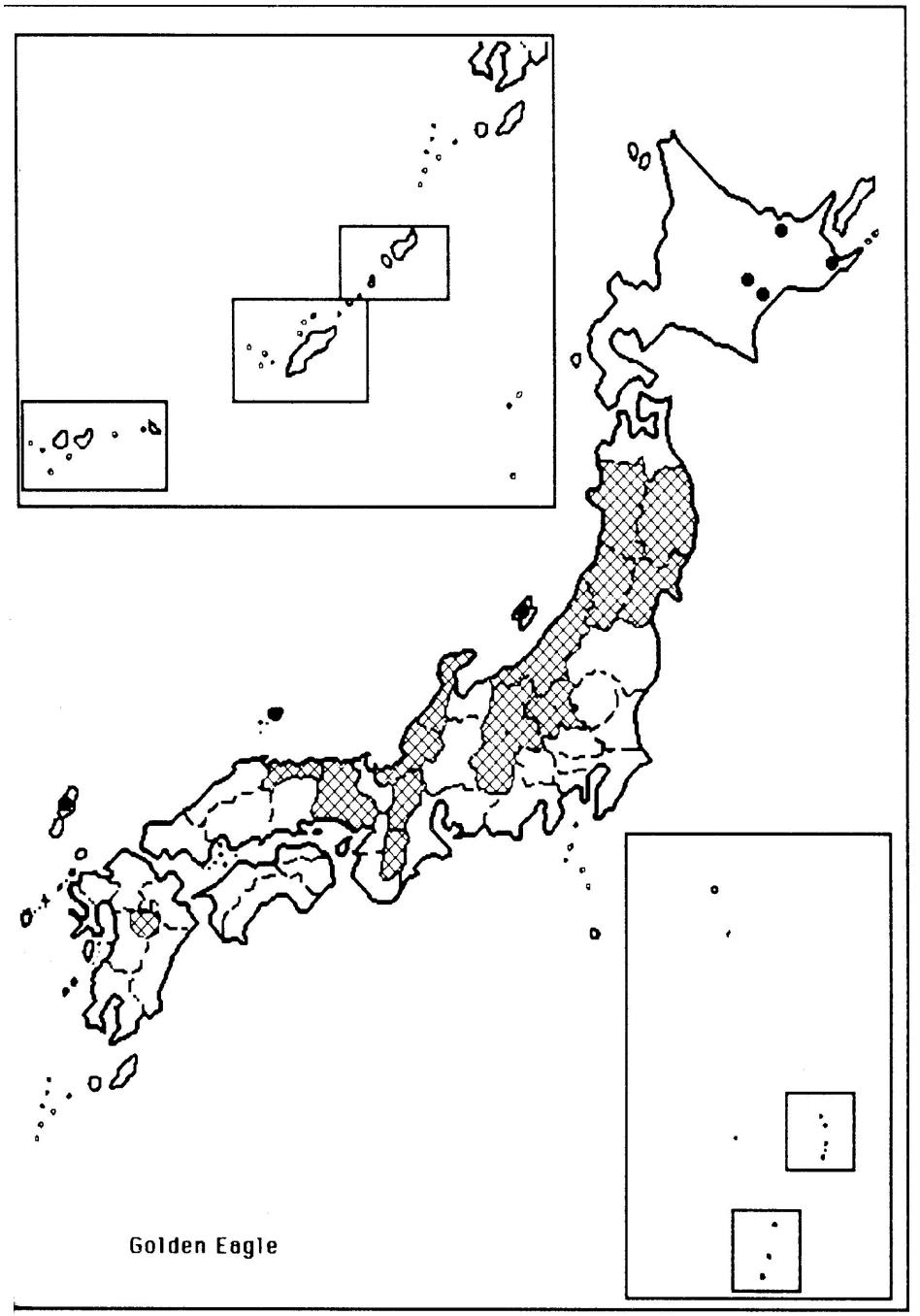
Distribution: The Golden Eagle has been reported from 24 prefectures ranging from Hokkaido (Daisetsu, Tokachi, Abashiri and Nemuro districts (Takada *et al.* 1981; Ogawa 1985)) to Kyushu, with records also from Sado, Oki, Shikoku, and Tsushima (OSJ 1974). The main distribution is in the Ou and west Chugoku mountain ranges in Honshu. Breeding has only been confirmed in thirteen prefectures in Honshu; Akita, Iwate, Yamagata, Miyagi, Niigata, Nagano, Gunma, Ishikawa, Fukui, Shiga, Nara, Hyogo, and Tottori (Higuchi & Takeda 1983). It was found breeding in Kyushu for the first time only in 1983 (Takeishi *et al.* 1984).

Status: A rare and local resident of the main mountain ranges of Honshu, remaining above 1,200m all year (Austin & Kuroda 1953). The population is estimated at no more than 370-500 birds (Higuchi & Takeda 1983). Pairs remain on territory throughout the year and in the Hakusan region of Ishikawa-ken, which has the highest density, home ranges are 17.3-30.7km^2/ pair. Each home range is bounded by main ridges with a valley forming the core of the range (Ueuma 1984).

Despite designation as a 'National Monument' and a "Special Bird for Protection" (Environment Agency 1976), deaths as a result of shooting and of collisions with wires have been reported (Kazama 1973; Ikeda 1988) and in some areas it is suffering habitat loss as a result of the development of remote mountain areas for skiing grounds, and from tree felling (Higuchi & Takeda 1983).

Habitat: It is generally restricted to fairly remote mountain regions with steep-sided valleys and exposed rocky crags (OSJ 1974), although on the snowy Sea of Japan side of the mountains in Niigata-ken low rather than high mountains are preferred (Kazama 1973).

Breeding: The breeding season is from February to June. The nest is built on a high cliff ledge and the clutch of 1-3 eggs is laid from mid-March to early April, rarely late February; incubation takes 45 days and fledging a


Golden Eagle

further 70-80 days, by which time usually only one chick survives (Kiyosu 1937; Kuroda 1984; Kawada pers. comm.).

Migration: Non-migratory in Japan, although the distribution of records outside the known breeding range indicates that birds wander quite widely, reaching the coast, as at Kinkazan Island, Miyagi-ken (Sato *et al.* 1968); Hokkaido - the Daisetsu mountains (OSJ 1974) and the coast at Cape Ochiishi (e.g. January 1967, Takada *et al.* 1981) and Tsushima on occasions, although whether these records refer to young birds wandering around Japan or arriving from the continent is not known.

Prey: Three species alone, the hare *Lepus brachyurus* (54.4%), the pheasant *Syrmaticus soemmerringii* (18.3%) and the snake *Elaphe climacophora* (17.3%), make up virtually all of the diet (Yamanoi 1986, reported to the OSJ annual meeting; Ikeda 1988), with other species such as the squirrel *Sciuris lis*, Racoon Dog *Nyctereutes procyonoides*, the mustelids *Martes melampus* and *Mustela sibirica*, pheasant *Phasianus versicolor* and dove *Streptopelia orientalis* being recorded only rarely (Tachibana 1980).

Subspecies: *A.c. japonica* (OSJ 1974).

The literature on the Golden Eagle in Japan is very extensive, with a newsletter devoted entirely to it. For further detail see Tachibana (1969, 1981 & 1983), Shigeta (1974), Ueuma (1982), Horio (1983), Nakajo *et al.* (1983) and Shiomura (1983).

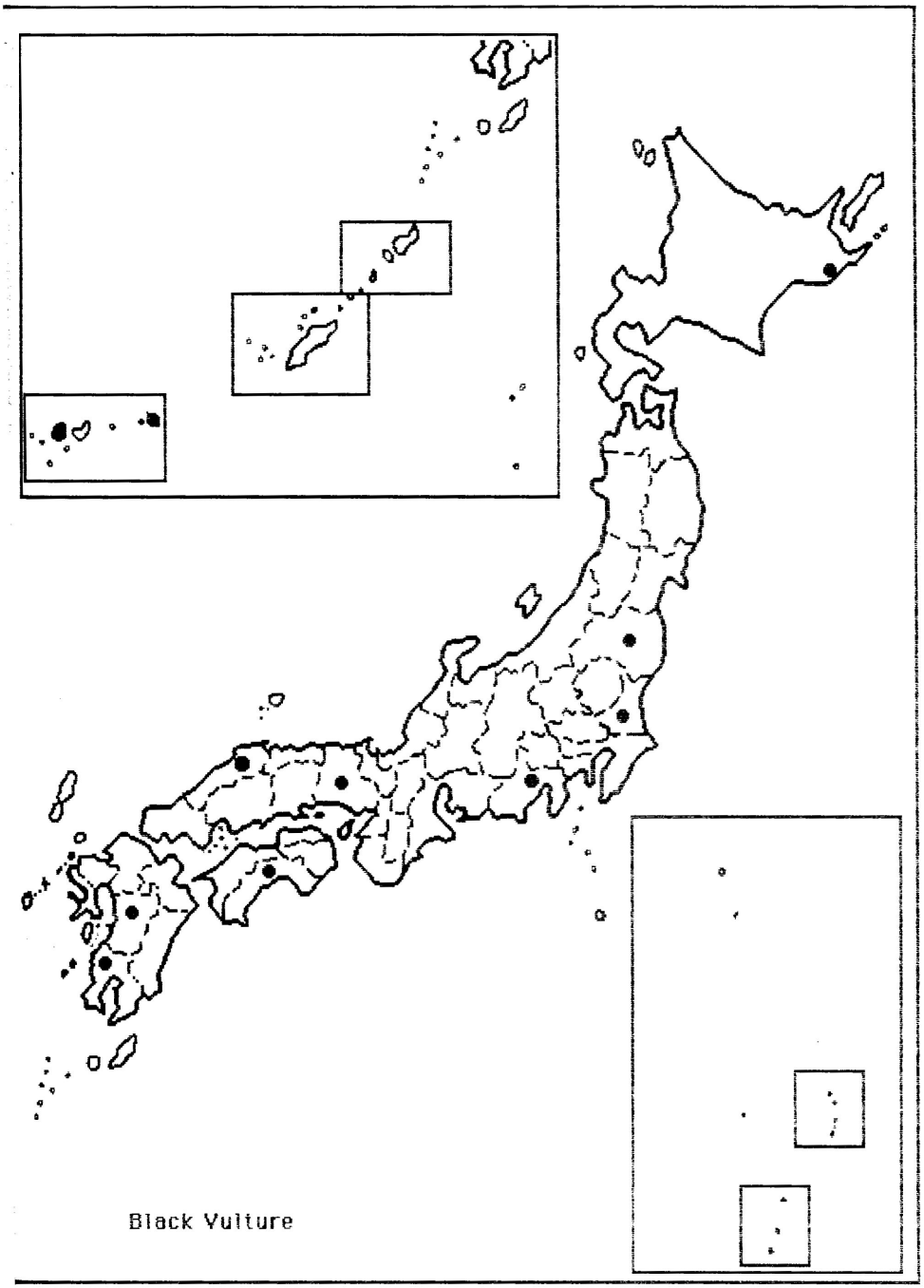
18. Cinereous or Black Vulture *Aegypius monachus* **Kuro-hagewashi**

Distribution: The Cinereous Vulture has been recorded from: Hokkaido (Kushiro in December 1925 (Kuroda 1927; Ogawa 1985)); Honshu (Fukushima-ken (undated), Shizuoka-ken (1 December 1925), Hyogo-ken (15 December 1962; Takano 1963), Shimane-ken); Shikoku (Kochi-ken 13 December 1935); Kyushu (Kumamoto-ken and Kagoshima-ken), Miyako-jima and Iriomote-jima (12 December 1967; Takara & Kuroda 1969) (Austin & Kuroda 1953; OSJ 1974). The last record was of one wintering in Ibaraki-ken in 1982-1983 which was still present on 23 February 1983 (Brazil 1983).

Status: An accidental winter visitor recorded only four times prior to 1953 (Austin & Kuroda 1953) and occurring probably no more than 10 times since. Most records have been in December, but it has wintered at least once, in Ibaraki-ken in 1982-1983.

Habitat: Open country with low hills and forest.

Migration: Birds recorded in southern Japan are likely to have come via the Korean peninsula, where they are regular winter visitors in small numbers (Chris Cook pers. comm.).


Black Vulture

Prey: Presumably feeds on carrion, although its diet in Japan has not been documented. The 1982/83 bird took up residence near a chicken farm and fed on discarded dead birds.

Subspecies: Monotypic.

19. Ryukyu Serpent Eagle *Spilornis perplexus* **Kanmuri-washi**

Distribution: Known in Japan only from Ishigaki-jima (b), Iriomote-jima (b), and recorded as a vagrant on Yonaguni-jima further to the west.

Status: A not uncommon local resident, occurring only in the Yaeyama Islands in the extreme southwest of the Nansei Shoto. It is quite common on Iriomote-jima, particularly in coastal districts, while on Ishigaki-jima it is uncommon and restricted to the Mt. Omoto area and several points along the coast. The total population is just under 100 birds. Recent surveys found 7-12 adults and 3-4 young on Ishigaki-jima, and 60 adults, 13 young and 4 birds of unknown age on Iriomote-jima (Hanawa *et al.* 1985).

Classified as a 'National Monument' and a "Special Bird for Protection" (Environment Agency 1976), it has recently been elevated to full specific status as *Spilornis perplexus* (Ferguson-Lees in press) and thus becomes an additional species endemic to the Nansei Shoto, and the only endemic bird in the Yaeyama Islands (see Brazil 1985a).

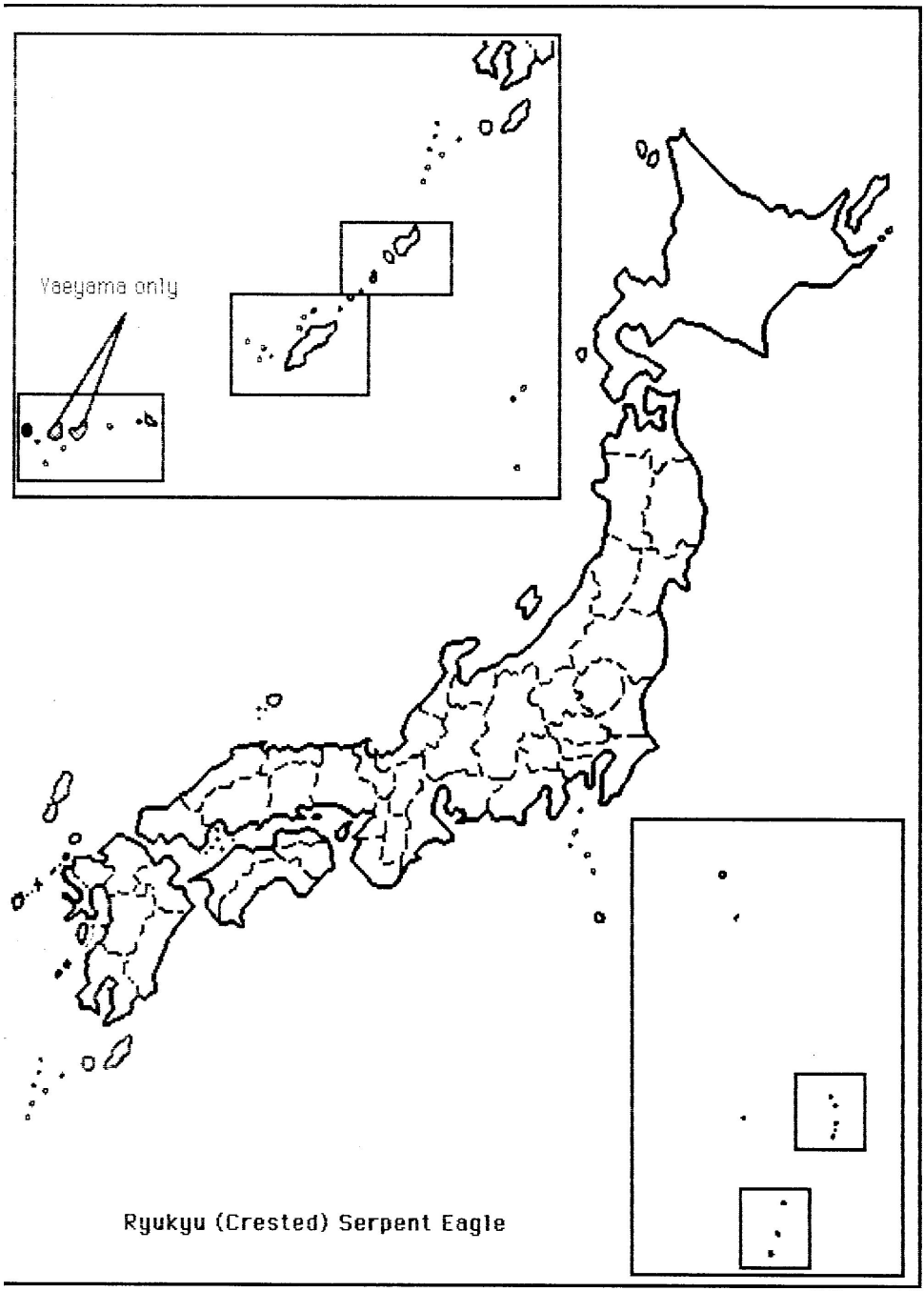
Habitat: Sub-tropical evergreen forest on low hills, occurring also around coastal cultivated lands, particularly in winter.

Breeding: Virtually nothing is known of its breeding biology other than that it nests in sub-tropical evergreen forest on both Ishigaki-jima and Iriomote-jima in the southern Nansei Shoto. Breeding, although long suspected, was first proven only in 1981 (Miyazaki 1981).

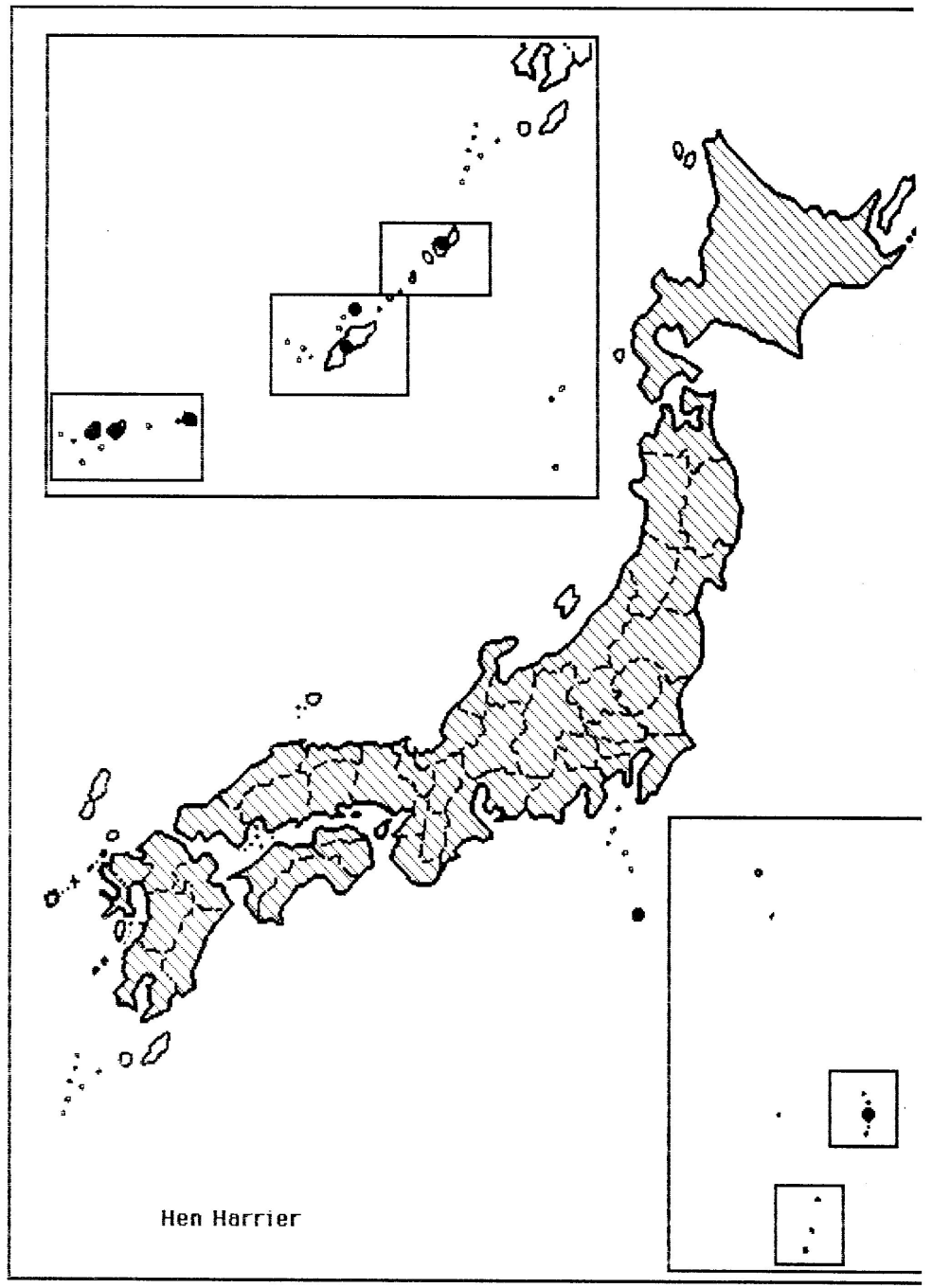
20. Hen Harrier *Circus cyaneus* **Haiiro-chuhi**

Distribution: The Hen Harrier was first collected from Japan near Nagasaki, Kyushu (Temminck & Schlegel 1847), then subsequently recorded from: Hokkaido, Honshu; Shikoku; Kyushu; Hachijo-jima, Chichi-jima; Amami-oshima, Iheya-jima, Okinawa, Miyako-jima, Ishigaki-jima and Iriomote-jima (OSJ 1974; Kohno & Shoyama 1982; Higuchi 1984; McWhirter & Ikenaga in prep.).

Status: Seebohm (1890a), presumably in error, believed it to be a summer visitor to Hokkaido and a winter visitor to southern Japan. It is now known to be a regular but uncommon, even rare, winter visitor to the lowlands of all four main islands, usually appearing from late October or early November onwards and leaving again by March or early April (e.g. Austin & Kuroda 1953). The majority of records are from the north. It is for example annual at



Ryukyu (Crested) Serpent Eagle


Hen Harrier

Shunkunitai in southeast Hokkaido, mostly from January to March (Takada pers. comm.), but has straggled south as far as the Izu and Ogasawara Islands, and to the Nansei Shoto from Okinawa south to the Yaeyama Islands on several occasions in November and December (McWhirter & Ikenaga in prep.). Almost all records in Japan refer to "ring-tailed" females or immature males, which almost invariably occur singly.

Habitat: Open areas of grassland, cultivated land, marshes and swamps (OSJ 1974), reclaimed land and waste land.

Subspecies: *C.c. cyaneus* (OSJ 1974).

A bird recorded at Cape Ochiishi, southeast Hokkaido in 1984 and previously published as a Pallid Harrier (Osawa 1986) has subsequently been rejected.

21. Pied Harrier *Circus melanoleucos* **Madara-chuhi**

Distribution: The Pied Harrier was first recorded from Tsushima in 1973, and 1975; it has subsequently been reported from: Honshu (Tochigi-ken 27 April 1986 and in June and July 1988, Kanagawa-ken 25 June 1983, at Lake Kasumigaura, Ibaraki-ken 1978, 13 July 1986, on Hegura-jima, Ishikawa-ken 1979, 1985, Wakayama-ken 1977); Kyushu (Kagoshima-ken 10 March 1980 and 15 September 1983); Tsushima 1973, 1975; Kusagaki-jima 1973, Tokashiki Islands 20-24 October 1985, Ishigaki-jima (7 April 1982 and 1 May 1983), Iriomote-jima (dates uncertain) (Martins 1980; WBSY 1982; WBSJ 1983, 1984; Kuroda 1984; Okinawa Yacho Kenkyukai 1986; Suzuki in litt., Hale in litt.; Ikenaga in litt.; McWhirter & Ikenaga in prep.).

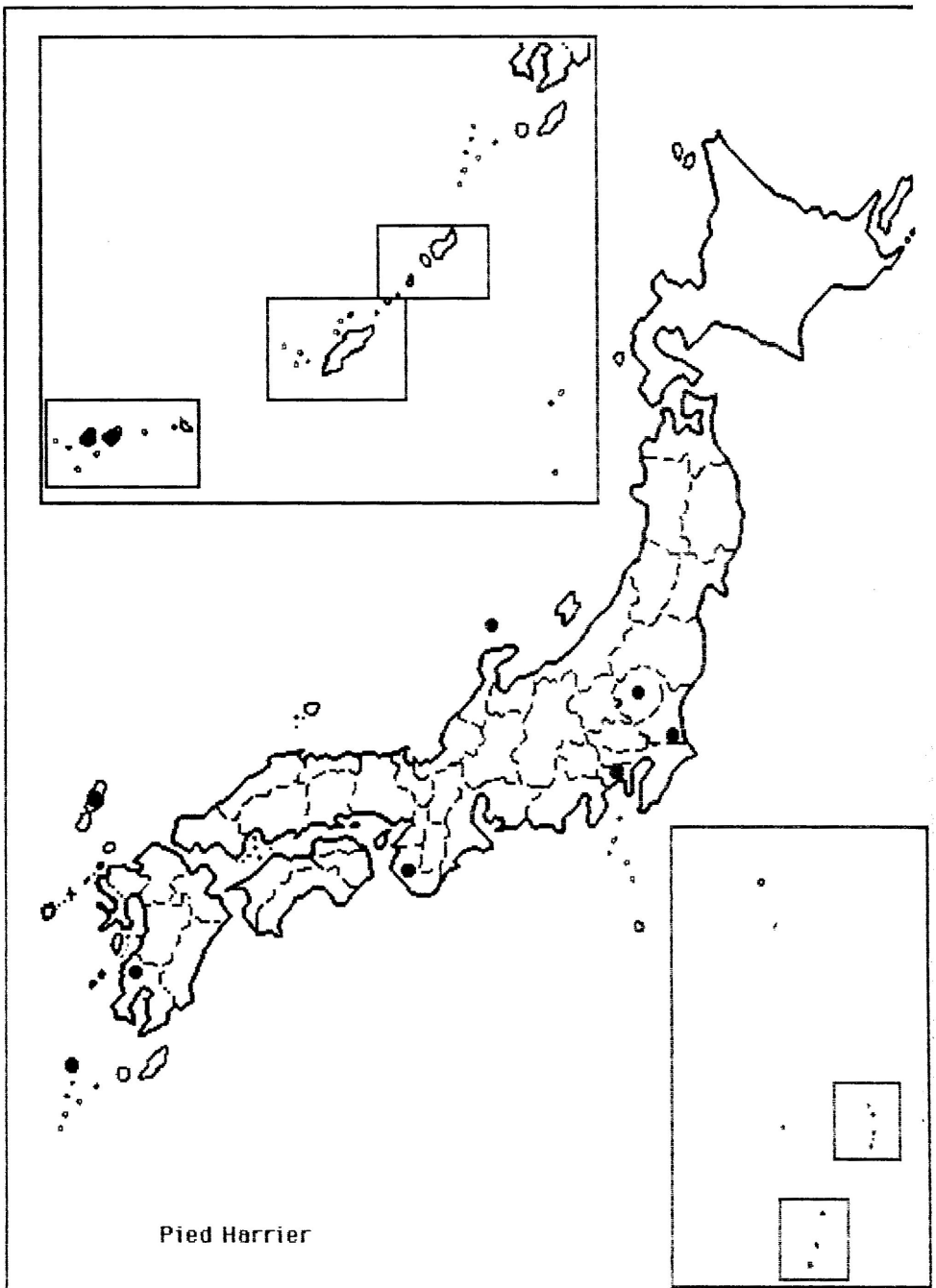
Status: An accidental to southern Japan from the Nansei Shoto north to central Honshu with in the region of 20 records, a number of which have been in late spring, and even in summer, for example at Ukishima, Ibaraki-ken, on 20 July 1986 and at Watarase, Tochigi-ken, in June and July 1988, the latter perhaps representing non-breeding birds. The earliest records have been in March and the latest in September and October.

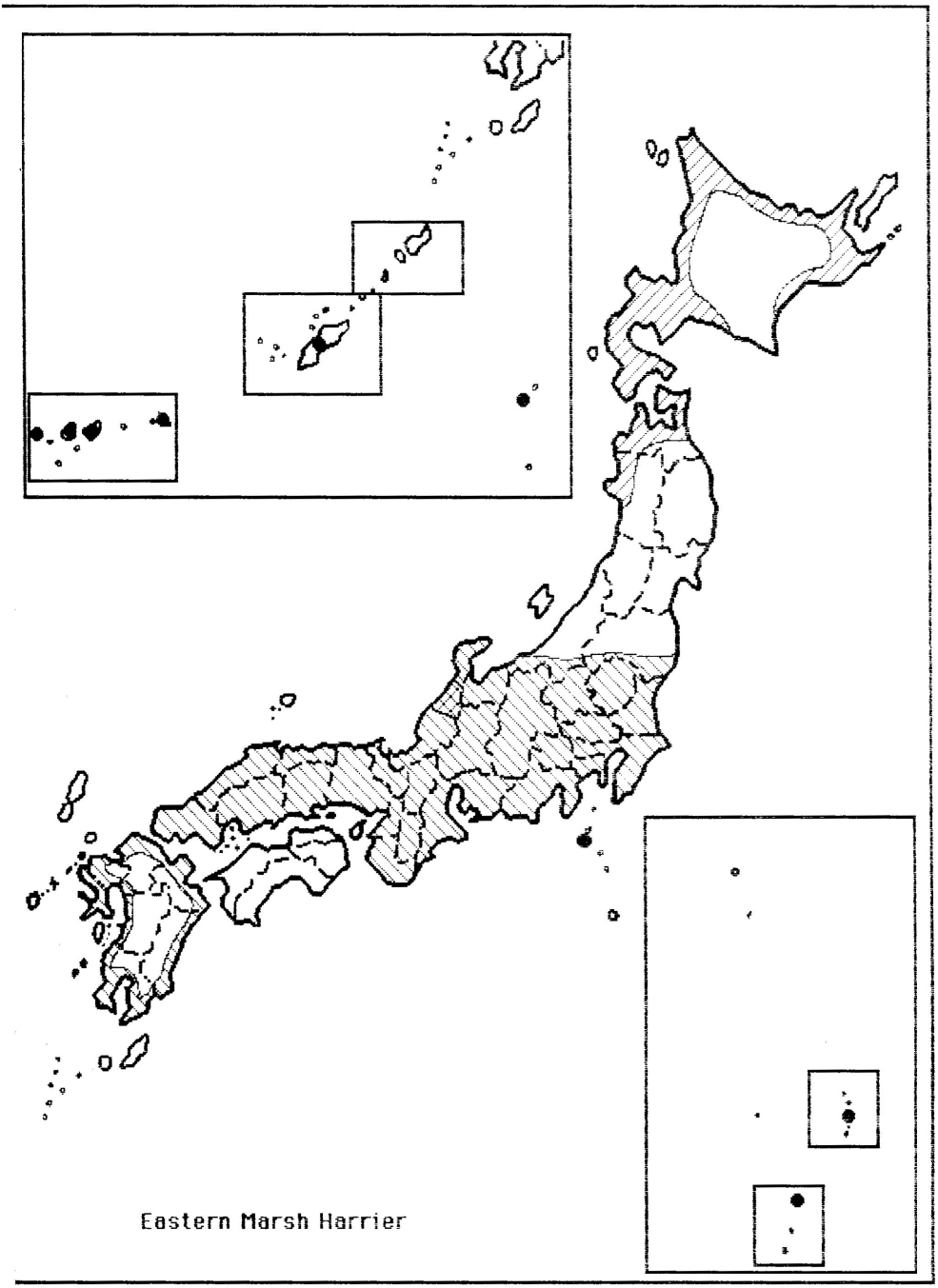
Habitat: Swamps and marshlands, and over agricultural land on small islands.

Subspecies: Monotypic.

22. Eastern Marsh Harrier *Circus spilonotus* **Chuhi**

Distribution: Regarded as a subspecies of the Western Marsh Harrier *C. aeruginosus spilonotus* in OSJ 1974, and now regarded as a full species, the Eastern Marsh Harrier was first collected by Blakiston at Aomori (Swinhoe 1877), then subsequently recorded from: Hokkaido (b); Honshu (Aomori-ken (b), Akita-ken (b), and Ishikawa-ken (b) and as a rarity elsewhere);


Pied Harrier


Eastern Marsh Harrier

Shikoku; Kyushu; Shikine-jima, Chichi-jima, Kita-iwo-jima; Okinawa, Miyako-jima, Ishigaki-jima, Iriomote-jima, Yonakuni-jima, and Minami-daito-jima (OSJ 1974; Higuchi 1984).

Status: A rather uncommon summer visitor and not very successful breeder in Hokkaido (Austin & Kuroda 1953; OSJ 1958) which has stayed as late as October and December at Utonai-ko (Fujimaki & Matsuoka 1972) and late October at Kiritappu in southeastern Hokkaido (Brazil 1985c), and is a regular winter visitor in small numbers to Honshu, Shikoku and Kyushu, appearing along coastal marshes in October and November and departing in April. It is for example quite regular in winter at Arasaki, Kagoshima-ken, Kyushu (Bradshaw *in litt.*; Brazil pers. obs.). The southernmost wintering records are from the Nansei Shoto, from Okinawa to the Yaeyama Islands (McWhirter & Ikenaga in prep.).

Habitat: It occurs both in winter and summer at large reedbeds, marshes and over reclaimed land near the sea. It breeds, or has bred, at Utonai-ko in southwest Hokkaido, where a nest was found in 1983 (Brazil 1983b). And irregularly in north and east Hokkaido. It occurs occasionally in summer at Notsuke and bred once in Kushiro Marsh in the 1970s (Takada pers. comm.). It also breeds or has bred in northern Honshu.

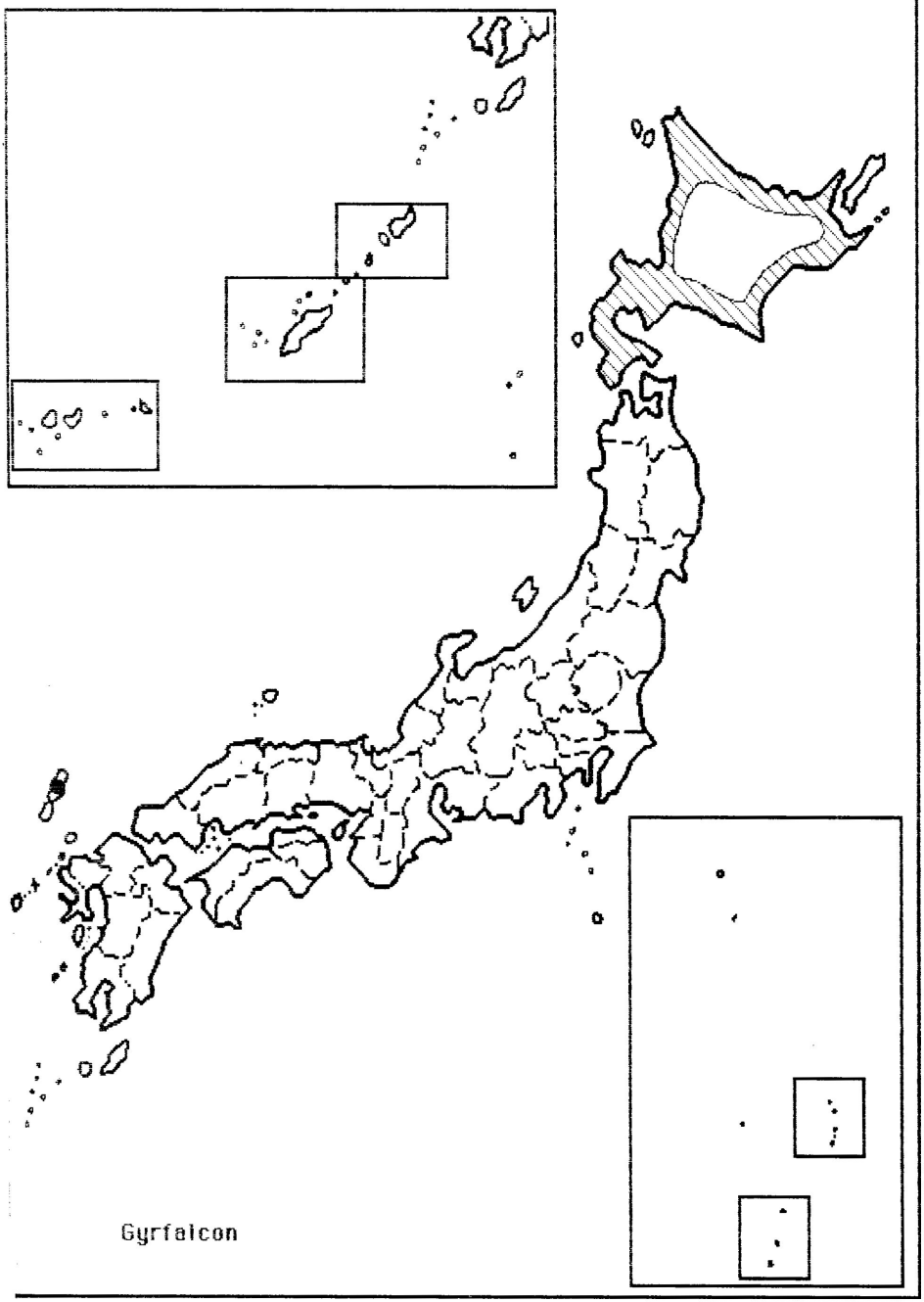
Breeding: The breeding season is from April onwards, when a large nest of sticks and reeds is built on the ground in a marsh or reedbed. The clutch of 4-7 eggs is laid from mid-May to early June with eggs laid at 3.3 day intervals, but hatching success is low. Incubation takes 33-48 days and fledging 35-40 days (Yamashina 1941; Austin & Kuroda 1953; Nishide 1979; Kuroda 1984).

Subspecies: *C.a. spilonotus* according to OSJ (1974) but more recently monotypic.

23. Gyrfalcon *Falco rusticolus* — Shiro-hayabusa

Distribution: The Gyrfalcon was first recorded from Hakodate on 15 March 1984 by Henson (Seebohm 1890a; Stejneger 1892), then subsequently elsewhere in Hokkaido (Oshima, Iburi, Hidaka, Rumoi, Tokachi, Kushiro, Abashiri, and Nemuro districts and once from Tsushima in 1963 (OSJ 1974; Poulsen 1982; Iijima 1983; Ogawa 1985)).

Status: A rare, but annual, winter visitor to Hokkaido, occurring mainly in the north, northeast and southeast. Only five specimens were known from Japan prior to 1953, their dates ranging between 25 December and 15 March (Austin & Kuroda 1953). These are matched generally by the sight records since then, which have also occurred from December to March, although it has occurred as early as 5 November 1984 at Rusha-gawa, northern Shiretoko, with early Steller's Sea Eagles (Brazil 1984/1985) and on 7 November 1983 on Notsuke Hanto, east Hokkaido, also with an early Steller's Sea Eagle (Brazil 1983c), and 22 November 1982 at Utnonai-ko,


Gyrfalcon

southwest Hokkaido (Poulsen 1984). Individuals, and sometimes pairs, are annual at Cape Ochiishi in the southeast (Brazil 1987a) and at Sarobetsu in the north, and irregular at Shunkunitai and Notsuke in the southeast (Takada pers. comm.). Koyama (1935) reported obtaining one in the Japan Alps in August but the specimen is not traceable for verification, and the only other record away from Hokkaido was from Tsushima between Korea and Kyushu.

Habitat: Rocky coastal cliffs and over open partially wooded countryside. It particularly favours capes, headlands and peninsulas such as at Shiretoko, Notsuke and especially at Ochiishi (Brazil 1987a).

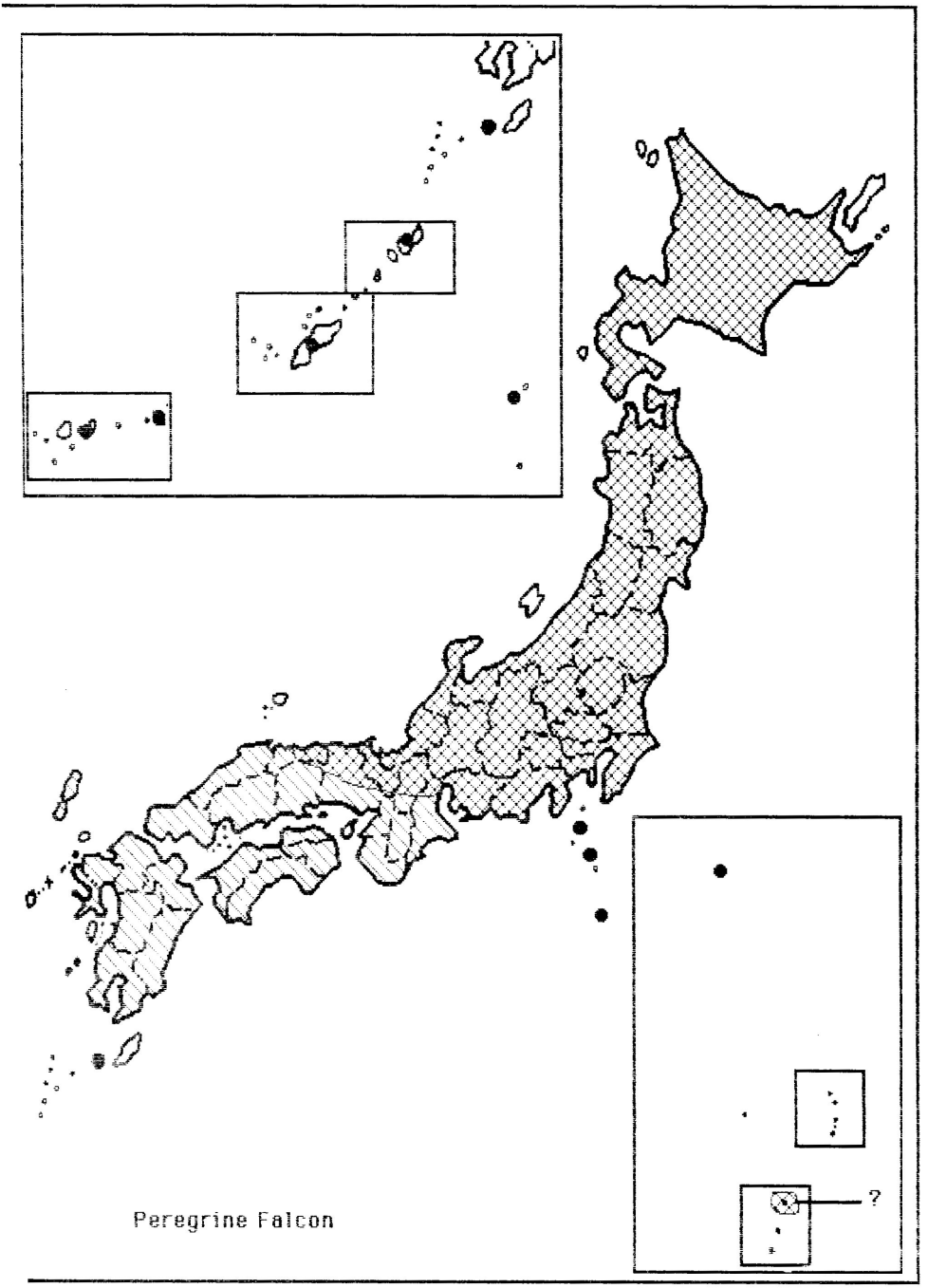
Subspecies: Monotypic.

24. Peregrine Falcon *Falco peregrinus* **Hayabusa**

Distribution: The Peregrine has been recorded throughout the Japanese archipelago, with three subspecies: *F.p. japonensis* from Hokkaido (b); Honshu (b); Kyushu (b); Sado, Tsushima (b); Shikoku; Oshima, Miyake-jima, Hachijo-jima, Torishima, Kita-iwo-jima; Yakushima, Amami-oshima, Okinawa, Miyako-jima, Ishigaki-jima, and Minami-daito-jima (Aranoff 1960; OSJ 1974; Hanawa 1984); *F.p. pealei* from Hokkaido (Hakodate, Akkeshi); Honshu (Niigata-ken); Kyushu (Kagoshima-ken); and Ishigaki-jima (OSJ 1974); and *F.p. fruitii*, first described by Momiyama (1927), an endangered resident island race, breeding only on 6.36km^2 Kita-iwo-jima. If still extant, the population is unlikely to exceed four pairs (King 1981), however there is no recent information. It has only once been reported away from this area, in 1956, on Torishima further north in the Izu Island chain (OSJ 1974). Vaurie (1965) considered that it probably also occurs in the Ogasawara islands, but to date there is no evidence for this. I certainly saw no sign of Peregrines on Haha-jima in summer 1987.

Status: A very uncommon resident and wanderer occurring throughout the Japanese archipelago, but proven breeding has been primarily along the Japan Sea coast and from the northern parts of Japan, northern Honshu and Hokkaido (WBSJ 1984b). The population is probably supplemented in winter by the arrival of birds from further north since it is more common at that season on all four main islands. Wintering birds arrive in central Honshu from early September to October and leave in March or April (Austin & Kuroda 1953). Some wander as far south as to the Nansei Shoto, where there have been 10+ records on Okinawa since 1977 (McWhirter & Ikenaga in prep.).

Breeding was long suspected, but only confirmed in 1952 on the Tottori/Hyogo-ken border and in Niigata-ken (Moyer 1952; Austin & Kuroda 1953). The breeding population is now known to number approximately 110-130 pairs, with the highest density of 25-31 pairs occurring in Iwate-ken


Peregrine Falcon
?

(Sekigawa *et al.* 1984). Well-known pairs nest annually on the headland at Muroran in southwest Hokkaido, on Moyururi Island in southeast Hokkaido and on Nanatsu-shima off the Noto Peninsula, Ishikawa-ken. It is classified as a 'Special Bird for Protection'.

Habitat: During summer it occurs along rocky coastal cliffs and on small rocky islands. In winter it visits lakes, marshes, estuaries and large rivers, wherever large numbers of waterfowl congregate.

Breeding: The breeding season is during May and June, the nest is usually built on a ledge on a steep rocky cliff, and a clutch of 3-4 eggs is laid taking 28-29 days for incubation, and a further 35-40 days to fledge (Yamashina 1982; Kuroda 1984).

Prey: Sea-birds, ducks and shorebirds. However, the dove *Columba livia* makes up the bulk of the diet at all seasons.

Subspecies: *F.p. japonensis*, *F.p. pealei* and *F.p. fruitii*.

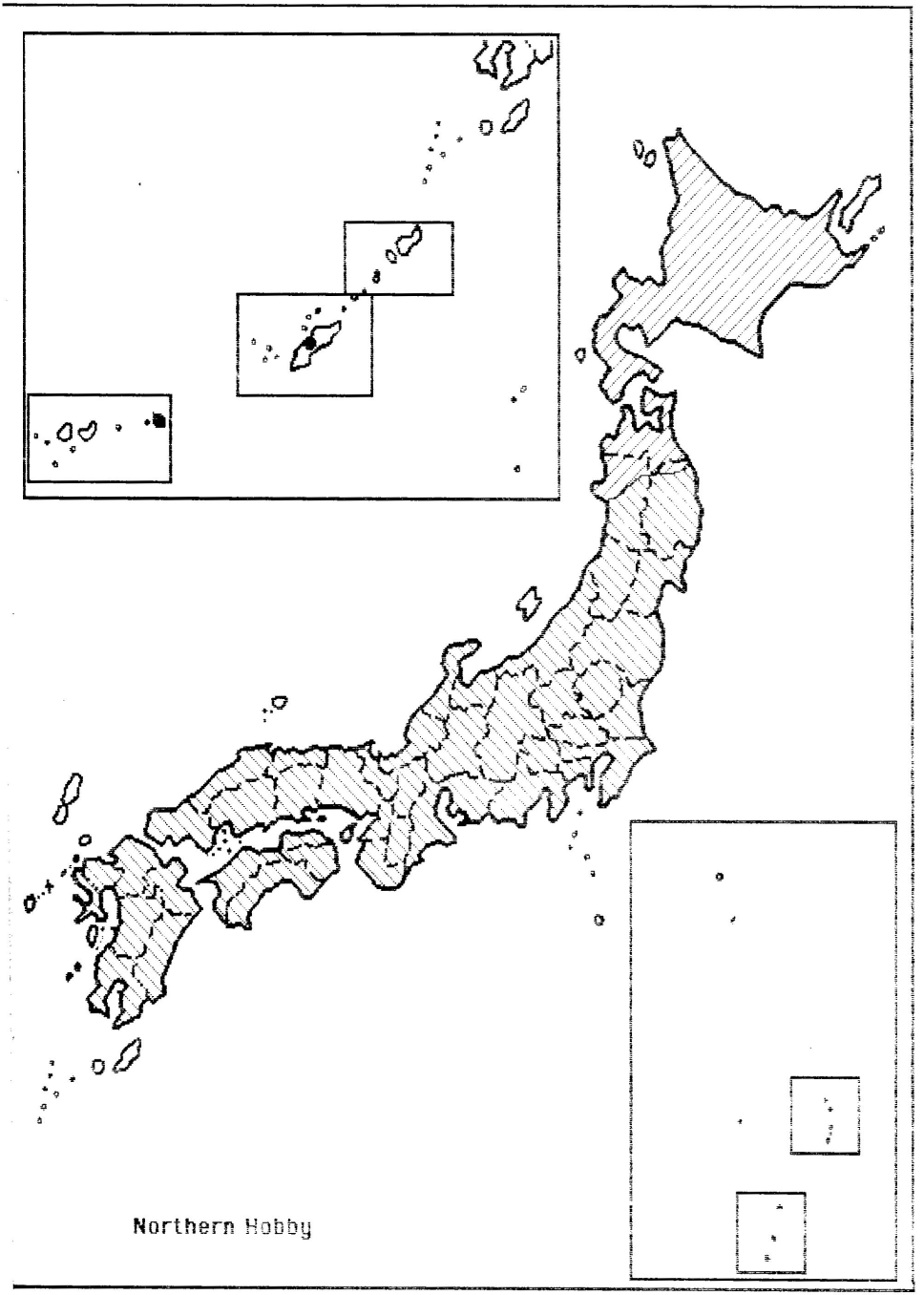
25. Northern Hobby *Falco subbuteo* **Chigo-hayabusa**

Distribution: The Northern Hobby has been recorded throughout Japan, from: Hokkaido (b); (Aomori b†, Iwate b†); Shikoku; Kyushu; Okinawa, the Tokashiki Islands, Miyako-jima (OSJ 1974; McWhirter & Ikenaga in prep.).

Status: A fairly common summer visitor to Hokkaido from May to October, which has also bred at least twice in northernmost Honshu. An uncommon migrant further south, except perhaps at Cape Irago, most frequently being seen on islands in the Japan Sea, such as Hegura-jima (Brazil 1987a), although it is sometimes seen near the Pacific coast in central Honshu e.g. at Hayama, Kanagawan-ken, on 13 October 1982 (Brazil 1982b), and it is a rare winter visitor to southern Honshu and Kyushu (OSJ 1974), although one was seen as far north as the Shimokita Peninsula, Aomori-ken, in winter 1980 (Suzuki *in litt.*). Although it has straggled to Shikoku, and as far south as Okinawa (5+ recent records in September, October and January), the Tokashiki Islands in March, and Miyako-jima (McWhirter & Ikenaga in prep.), the rarity of its occurrence south of Hokkaido on migration suggests that birds breeding in Hokkaido probably migrate via the continent, a theory lent some support by the fact that it is a regular migrant over Hegura-jima, in the Sea of Japan, from early May to early June and late September to mid-October (Ishikawa Yacho no Kai 1979).

Habitat: It prefers forest edges, occurring in or near woodlands with clearings and cultivated fields, occasionally along sea cliffs (OSJ 1974), and sometimes, particularly in autumn, around mountain summits where it

† Formerly bred, but today extinct as a breeder.


Northern Hobby

catches late-flying dragonflies on the warm updrafts around active volcanos (Brazil 1985c). I have also seen it in the suburbs of Sapporo city Hokkaido. Fennell (1953) noted birds on Daikoku-jima on 21 June 1951 where he suspected them of preying on Leach's Storm Petrels; presumably only foraging there since there are no trees to nest in.

Breeding: Breeding in Hokkaido was first noted by Kobayashi & Ishizawa (1935) and Jahn (1939). Nesting begins in May and continues to August. The nest is usually in an old sparrowhawk's or crow's nest about 10m high, usually in a conifer, often in a line of shelter-belt trees. The clutch consists of 2-3 eggs. The egg-laying period is from late May to late June, with incubation taking about 28 days and fledging 28-32 days (Kiyosu 1966, 1978).

Migration: It is presumed to migrate via the continent to and from Japan, but details of its route have not been documented.

Prey: Aerial insects, especially dragonflies, and small birds.

Subspecies: *F.s. subbuteo* (OSJ 1974).

26. Merlin *Falco columbarius* **Ko-chogenbo**

Distribution: The Merlin was first recorded for Japan by Swinhoe (1877), and subsequently noted from: Hokkaido, Honshu; Sado, Oki, Shikoku; Kyushu; and Hachijo-jima; Okinawa, the Tokashiki Islands, Myako-jima, and Yonaguni-jima (OSJ 1974; McWhirter & Ikenaga in prep.). Almost all records refer to *F. c. insignis*, although *F.c. pacificus* has also been recorded from northern and central Honshu (OSJ 1974).

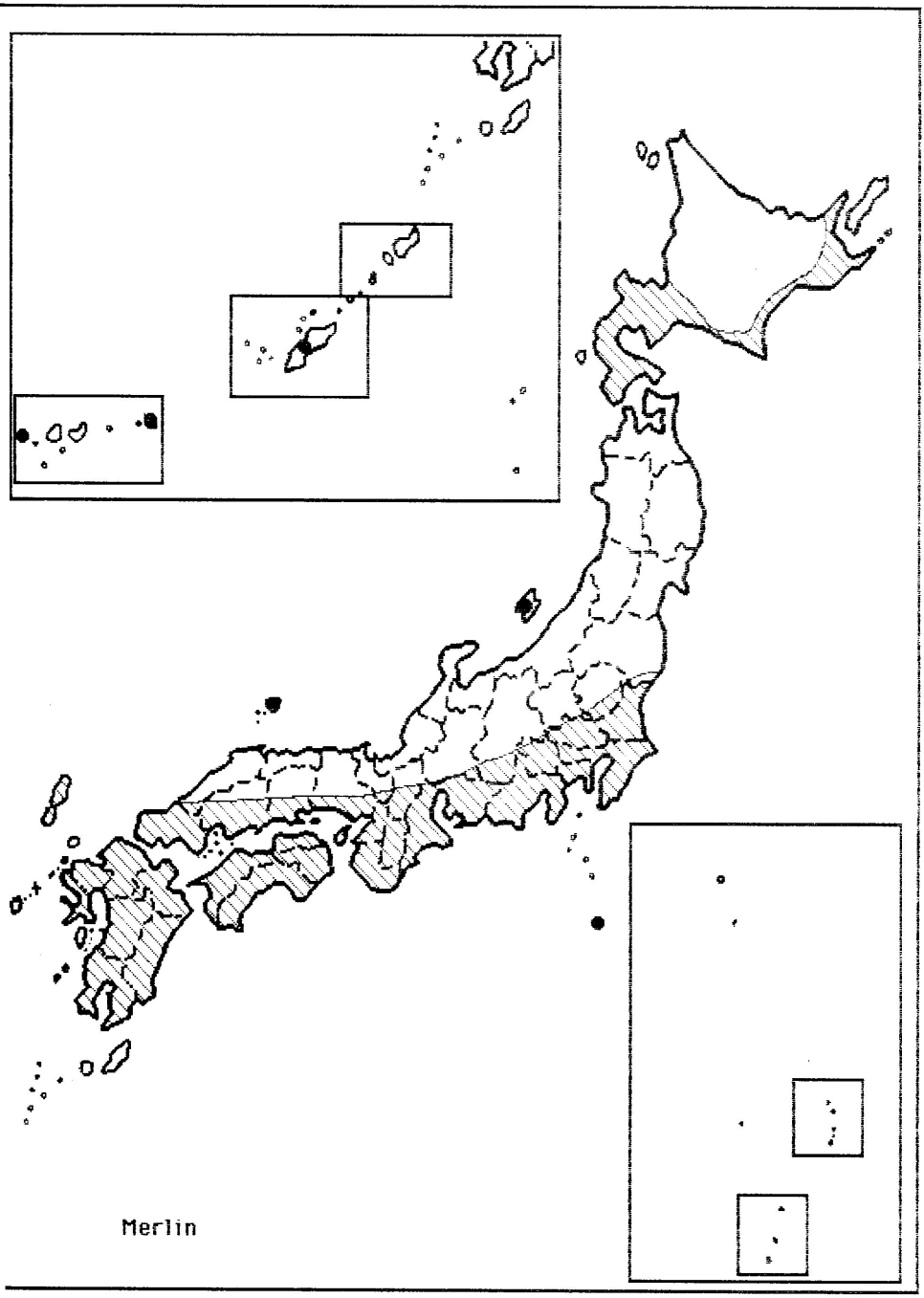
Status: Seebohm (1890a) regarded it, presumably in error, as a common resident in Japan. It is now better known as a very uncommon winter visitor, from October to April, which can appear virtually anywhere in Japan - even in the centre of Tokyo (Kuroda 1974) - but which is somewhat commoner in the west (Kyushu) and in the north (Hokkaido) than in Honshu (Brazil pers. obs.).

Habitat: Wooded plains, over cultivated land, coastal sand dunes and sea cliffs (OSJ 1974).

Migration: Rather like the Peregrine, the Merlin species wanders in winter, reaching as far south as the Nansei Shoto from Okinawa to the Yaeyama Islands between October and February (the most recent and latest was on 2 February 1987 at Kadena Air Base, Okinawa (McWhirter & Ikenaga in prep.)), and may not have a regular migratory route.

Prey: A wide range of small birds, grasshoppers and dragonflies.

Subspecies: *F.c. insignis* and *F.c. pacificus*.


Merlin

27. Lesser Kestrel *Falco naumanni* **Hime-chogenbo**

Status and Distribution: An accidental which has occurred at least twice in Japan, from Tsushima and the Nansei Shoto (Kuroda 1984; McWhirter & Ikenaga in prep.), with apparently several other reports requiring confirmation (Morioka *in litt.*).

The first accepted recorded was from Tsushima, Nagasaki-ken, on 25-27 April 1977 (Morioka *et al.* 1978), and it has subsequently occurred on Iriomote-jima on 26 March 1984 (McWhirter & Ikenaga in prep.).

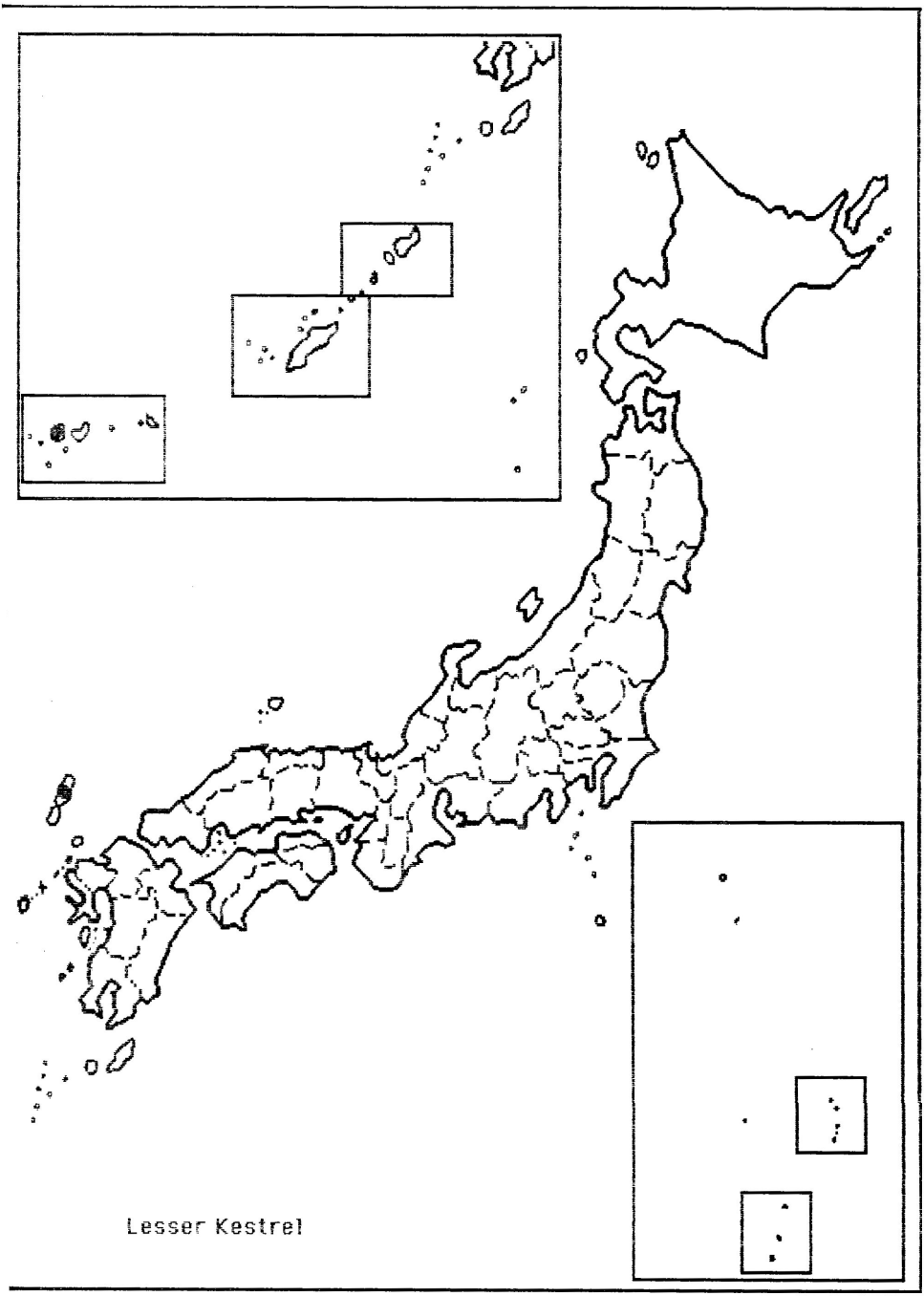
28. Eurasian Kestrel *Falco tinnunculus* **Chogenbo**

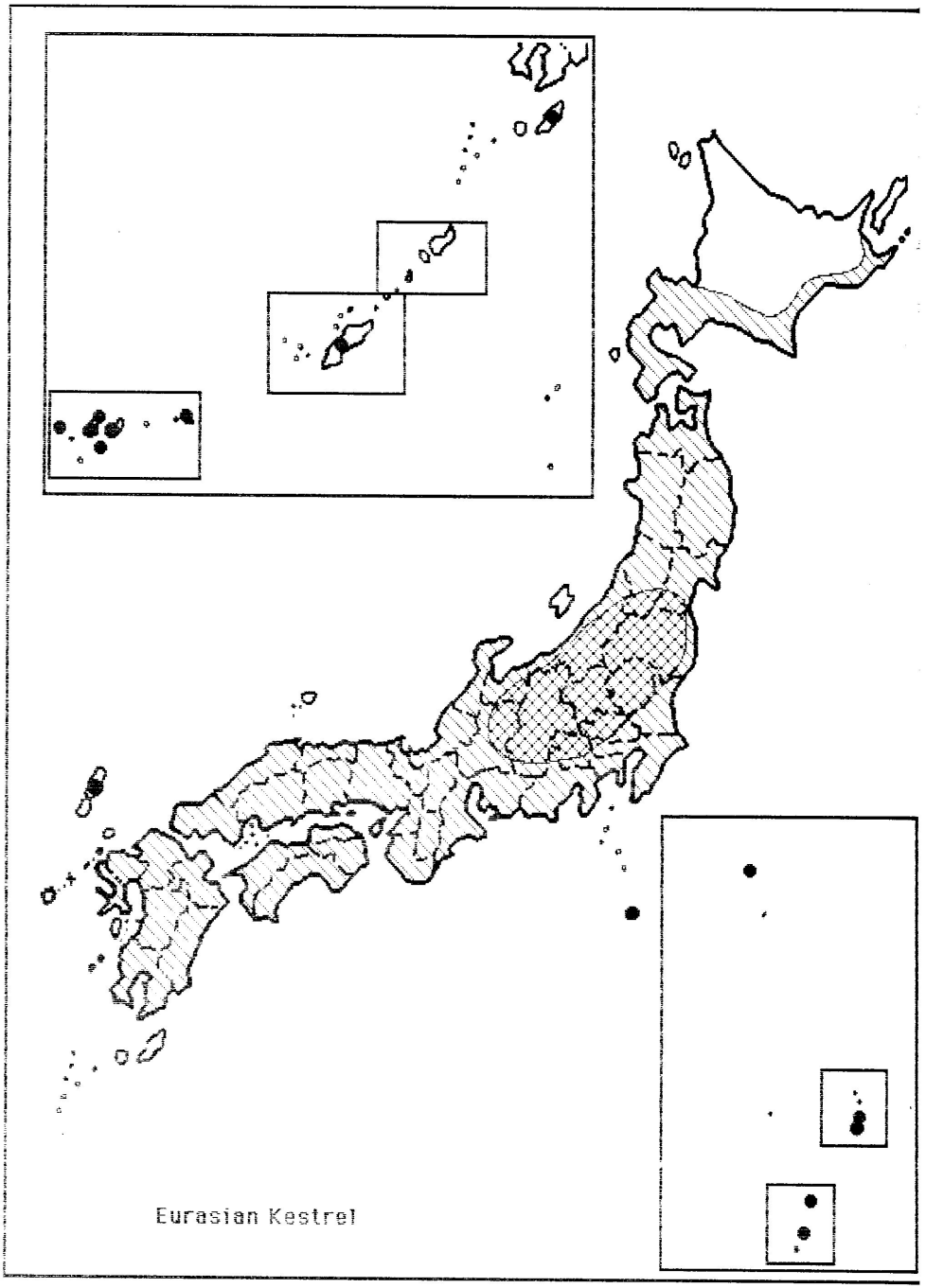
Distribution: The Eurasian Kestrel occurs throughout most of the Japanese archipelago and has been recorded in: Hokkaido, Honshu (Miyagi-ken (b), Fukushima-ken (b), Nagano-ken (b), Yamanashi-ken (b), Saitama-ken (b)); Shikoku; Kyushu; Sado, Tsushima; Hachijo-jima, Torishima, the Ogawasara Islands, and the Iwo Islands; Tanegashima, Okinawa, Miyako-jima, Ishigaki-jima, Iriomote-jima, Hatoma-jima, Kuro-jima, Yonakuni-jima (OSJ 1974).

Status: It was regarded by Seebohm (1890a) as a common resident of the southern islands, but not recorded from Hokkaido. It is now better known as a rare breeder in Honshu and an uncommon winter visitor throughout most of the Japanese archipelago from Hokkaido southwards. In Hokkaido it occurs mainly on migration in October and November and less commonly during winter, from December to March in southeast Hokkaido (Takada pers.comm.). Nowhere is it as common in equivalent habitats as in Europe. An extremely pale individual wintered at Cape Kiritappu in southeast Hokkaido in 1984/85 (Brazil pers. obs.).

Habitat: In summer it occurs in the highlands, to an altitude of about 3,000m in the northern Japan Alps (Brazil pers. obs.), and to 3,192m on 14 August 1988 on Kita-dake in the southern Japan Alps (Cook *in litt.*). In winter it can be found in the open lowlands, in woodland clearings, around cultivated fields, coastal grassy plains and sand dunes.

Breeding: It breeds colonially in hollows and ledges on riverine cliffs, rarely in trees (OSJ 1974). Several nesting colonies are known in the highlands of central and northern Honshu, mainly along river gorges, and recently some pairs have moved into cities and are now breeding on buildings and even in cavities in metal bridge struts (Fukui 1986). Breeding was only confirmed in 1948-50 when Hosono (1950) found a colony of 20+ pairs nesting in Jusanga cliff in Nagano-ken. Breeding begins as early as late February and continues to June. At this season its shrill repeated "kee, kee, kee" calls can be heard (Yamashina 1982). The clutch is of 3-9, usually 4-6 eggs, incubation taking 27-31 days and fledging a further 27-33 days (Kiyosu 1978; Kuroda 1984). Nesting occurs in colonies of up to 36 adults in Nagano-


Lesser Kestrel


Eurasian Kestrel

ken and Yamanashi-ken along the Kamanashigawa, with nests built in lava hollows (Hyuga 1957; Hosono 1961; Yamashina 1982; Fukui 1986).

Prey: Small rodents and birds.

Subspecies: *F.t. interstictus* (OSJ 1974).

29. Amur Falcon *Falco amurensis* **Akaashi-chogenbo**

Distribution: The Amur Falcon was first recorded from Japan in Niigata-ken on 27 May 1979. It has subsequently been seen in: Hokkaido (a young male in Nemuro district 2-3 June 1985); Honshu (Ishikawa-ken, a juvenile from 9 October to 27 November 1983 at Kanazawa-shinko, and a male on Hegura-jima, on 13 May 1988, in Fukui-ken a juvenile on 7 October 1984 Fukui-shinko in Aichi-ken on 25 September 1986); Kyushu (Saga-ken a female on 14 October 1981 at Suminoe-ko; Nagasaki-ken a male on Fukue-jima on 3-4 May 1981, and in Kagoshima-ken on 20 May 1984); and also on Tsushima (a male on 3 May 1981) (Watanabe 1981; WBSJ 1981a, 1981b, 1982, 1985a, 1985b, 1988; Brazil 1985b; Kawaji *et al.* 1987).

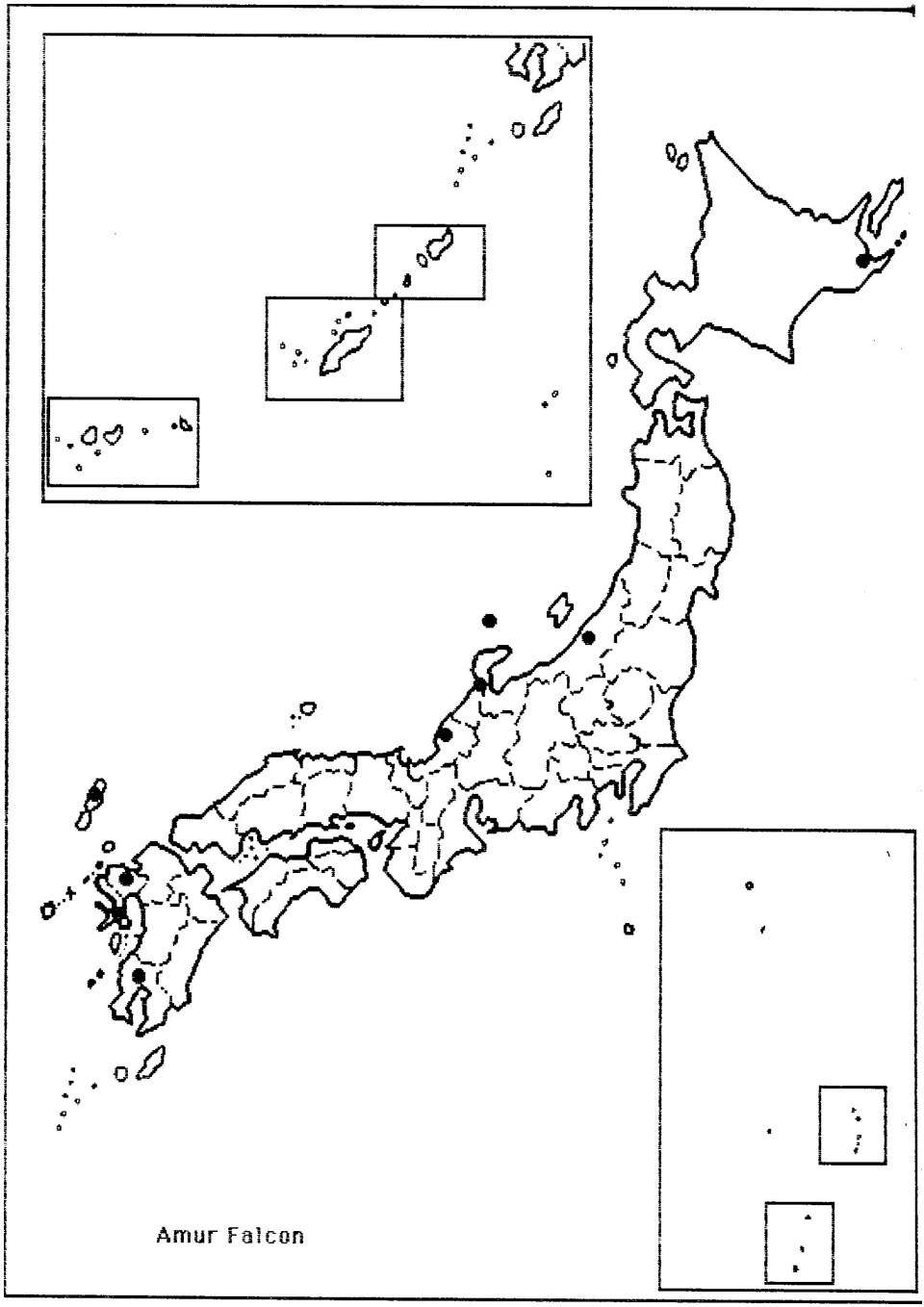
Status: An accidental, with at least ten records, mostly males in late spring from 3 May to 3 June, but also several females and juveniles in autumn from as early as 7 October to as late as 27 November. Records range from Kyushu, islands in the Sea of Japan, to east Hokkaido.

Habitat: It has occurred on open reclaimed land, and on agricultural land where it perches on trees and telephone wires from which it sallies forth to catch food.

Migration: The distribution of the records and the known migration route to its east Asian breeding area suggest that birds occurring in Japan may overshoot across the Japan Sea rather than migrate via the adjacent island chains.

Prey: The Niigata bird was seen to catch a frog (Watanabe 1981), while the Hokkaido bird was feeding on unidentified insects caught on the ground in grass pasture (Brazil 1985b).

Subspecies: Monotypic.


Amur Falcon

CONCLUSIONS

It is believed that bird of prey populations are decreasing in Japan due to a combination of habitat destruction and poaching. The protection of birds of prey in Japan needs to be intensified by conserving their habitat, preventing poaching and by strengthening law enforcement.

After habitat loss, poaching is the major threat affecting bird of prey populations. For example in Tochigi prefecture between 1975 and 1977 Northern Sparrowhawk, Common Buzzard, Grey-faced Buzzard, Hodgson's Hawk Eagle, Eurasian Kestrel, Collared Scops Owl and Brown Hawk Owl were all poached (Kikuchi 1971, in Nakayama 1985), in addition Crested Honey Buzzard, Black Kite, Northern Goshawk and Ural Owl were also suffering from poaching (Nakayama 1985). Hodgson's Hawk Eagle have been reported as being shot with air rifles, and fetching as much as $200,000-$400,000 on the black market, with individual feathers (used for fletching arrows) selling for up to $3,000 (Hayashi 1975).

The problems faced by most birds of prey in Japan are exemplified by those that the Northern Goshawk is suffering. The alarming situation with regards poaching in Tochigi Prefecture led to requests being made to the Tochigi prefectural government and the prefectural police that measures be taken against these illegal activities. Both began to act, but many other Prefectures declined to do so. As a result local chapters of the Wild Bird Society of Japan felt the necessity to take action into their own hands and, with the aid of volunteers, mounted protective surveillance over several nests. This has enabled several pairs to breed successfully, however 12 out of 17 nests not under protective surveillance were poached or nesting failed as a result of the intervention of poachers (Nakayama 1985); poaching thus still remains a major threat to the population of this and other species.

A major obstacle to the protection of birds of prey, and in fact all birds and animals in Japan, is that in those cases where catching or hunting is illegal, possession is not. Thus unless the culprit is caught in the act no action can be taken, and as already shown the police are reluctant to act in the first place. It is essential that this loophole in the law should be removed. An added loophole exists in that import licenses for birds of prey can be issued by private pet businesses, thus any bird can be kept if the owner is in possession of an "import licence" regardless of whether the bird in question was imported or obtained locally. In order to close this loophole it is necessary to use irreplaceable identification bands on birds so that they can be registered officially, coupled with the proper control of import licences (Nakayama 1985). Since April 1989, identification bands for captured birds, other than those imported, have been a requirement for the owner by the Enviromental Agency.

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