

Black bear
(*Ursus americanus*)

John Schoen and Lily Peacock



FIG 1. An adult black bear in spring feeding on a tidal sedge flat in southeastern Alaska. (John Hyde)

The black bear (Fig. 1), which occurs in northern Mexico, 32 states, and much of Canada, is the most abundant and widely distributed of the three bear species in North America. The distribution of this

highly adaptable omnivore in North America largely overlaps the occurrence of forest cover. Black bears are smaller, less aggressive, and generally more tolerant of human activity than brown bears (*Ursus arctos*). Habitat loss and fragmentation of forestland, however, has isolated some peripheral populations, increasing conservation concerns throughout the southern range of the black bear in North America (Servheen 1990).

The black bear—the most abundant bear in Alaska—is indigenous to Southeastern Alaska (Southeast) where the species is common along the mainland coast and southern islands. Throughout their range in Southeast, black bears are often observed during spring and early summer grazing along tidal sedge flats at dusk. To many people, viewing black bears from a boat anchored in an isolated cove is a memorable part of cruising the Inside Passage. Most Southeast black bears have the characteristic coloration of black coat and brown muzzle. Adult male black bears in Alaska weigh from 200 to more than 400 lb (91 to 182 kg), with adult females weighing about half that amount. Southeast bears are the largest black bears in Alaska, and some big males may weigh more than 500 lb (227 kg).

Many Southeast hunters value black bears for their meat and hides, and big game guides are serving growing numbers of nonresident hunters in search of trophy black bears on the southern islands. General wildlife enthusiasts also enjoy black bears, and wildlife viewers and photographers are increasingly seeking bears at several established viewing sites in Southeast. Black bears (like brown bears) may play an important role in transferring marine nutrients into the terrestrial environment, and in southern Southeast, black bears

serve as an indicator of ecosystem integrity and wildland values. Of all the big game species in Southeast, the black bear has been the least studied.

STATUS IN SOUTHEASTERN ALASKA

Distribution

Black bears are distributed along the entire Southeast mainland and on most of the southern islands of the Alexander Archipelago (except Warren, Coronation, and Forrester islands) from the Canadian border to Frederick Sound (Klein 1965, Manville and Young 1965, MacDonald and Cook 1999) (Fig. 2). Black bears do not occur on the islands north of Frederick Sound, including Admiralty, Baranof, Chichagof, and adjacent islands that are inhabited by brown bears. Black bears occur on Douglas Island near Juneau and Sullivan Island in Lynn Canal. Throughout the islands, the black-color phase is predominant. Some brown-colored “cinnamon bears” occur on the mainland, and the blue-color phase “glacier bear” occurs most commonly on the northern mainland between Juneau and Yakutat.

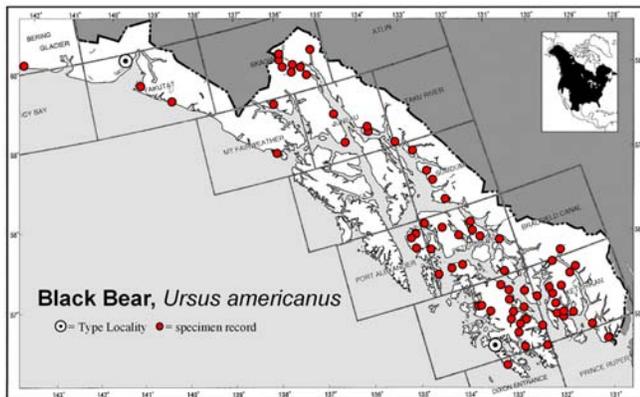


FIG 2. Range map showing the specimen records for black bears in southeastern Alaska (from MacDonald and Cook in press). Note the distribution is broader than the specimen records.

Abundance

Peacock (2004) measured black bear densities on northern Kuiu Island (Fig. 3) by using tetracycline-laced baits as a biomarker. Her northern Kuiu density estimate was 3.9 bears/mi² (1.5/km²). One of the highest-density populations of black bear reported across its range in North America, this figure is comparable with Lindzey and Meslow’s (1977) peak estimate of black bears on Long Island, Washington. In contrast, measured black bear densities on the Kenai Peninsula and in the Susitna basin of Southcentral

Alaska were 0.7 and 0.4 bear per mi² (0.27 and 0.17 bear per km²), respectively (Schwartz and Franzmann 1991, Miller et al. 1997).



FIG 3. Security Bay on Northern Kuiu Is. in central Southeast. This watershed was part of the Northern Kuiu Is. study area in Peacock’s black bear investigation which documented one of the highest density black bear populations in North America. (Lily Peacock)

No additional population studies or density estimates have been conducted on black bears in Southeast. However, the Alaska Department of Fish and Game (ADF&G) (Healy 2002) estimated black bear numbers, assuming a density of 1.5 bears/mi² (0.58/km²) throughout forested habitat, in each game management unit (GMU) throughout Southeast. This density estimate is slightly higher than the 1.4 bears/mi² (0.54/km²) estimated for much of forested western Washington (Poelker and Hartwell 1973) but significantly lower than Peacock’s (2004) estimate for northern Kuiu Island. The ADF&G estimates for black bear numbers throughout forested habitat were 7,666 bears for the Southeast mainland from the Canadian Border to Yakutat and 8,740 bears for the southern island population. The total population estimate of more than 16,000 black bears for Southeast may be conservative based on Peacock’s recent research. Although these estimates should be considered very general, the southern island populations likely occur at higher densities than the mainland populations.

Taxonomic Considerations

U.a. pugnax is recognized as the subspecies of black bear occurring throughout most of Southeast (MacDonald and Cook 1999). The subspecies *U. a. emmonsii* also is recognized near Yakutat Bay and

includes the glacier-bear color phase (MacDonald and Cook 1999). Stone and Cook (2000) suggested that two ancient lineages of black bears that diverged at the beginning of the Pleistocene (1.8 million years ago) converge in Southeast near Windham Bay. Peacock (2004) and Peacock et al. (in review a) also found two distinct genetic types of black bears in Southeast converging near the Cleveland Peninsula. According to Peacock (unpublished data), substantial genetic differences are found among black bear populations on the southern islands of the Alexander Archipelago, between the islands and mainland, and between Yakutat and the rest of the Southeast mainland. Peacock noted that a taxonomic status should be reviewed. For more information on Southeast island endemics, refer to Chapter 6.7.

Significance to the Region and Tongass National Forest

Black bears share many similarities with brown bears, an occurrence that justifies selection of the black bear as a focal species to highlight in southern Southeast for ecosystem management and for developing a conservation strategy throughout its range in the southern archipelago. Because of large area requirements and varied habitat use, bears represent an important umbrella species for maintaining ecosystem integrity throughout their range. It is also reasonable to assume that black bears (like brown bears) may play a role in transferring marine nutrients into the terrestrial environment and, therefore, could be considered a keystone species. And because of its vulnerability to cumulative human activities, the black bear may serve as an indicator of wildland values. In comparison to brown bears, black bears are generally more secretive, are less aggressive and threatening to humans, and have higher reproductive rates. Therefore, the vulnerability of black bears to resource development and increasing human interactions is likely lower than for brown bears.

Bear Hunting

The black bear is one of the most popular species of big game in Southeast and is hunted by resident and nonresident sport hunters and local subsistence hunters. The 10-year (1991-2000) reported annual kill (including sport hunting, defense of life or property, and other) of black bears on the Southeast mainland from the Canadian Border to Yakutat (including Revillagigedo and adjacent islands near Ketchikan) was 224 bears (Healy 2002). GMUs 1A (Ketchikan

area) and 1C (Cape Fanshaw to Berners Bay) had the highest reported kills. The southern islands (GMUs 2 and 3, which include Prince of Wales, Mitkof, Kupreanof, and Kuiu islands) had a 10-year reported kill of approximately 530 bears annually (Healy 2002).

In nearly all areas of Southeast, the reported annual kill of black bears has increased significantly. For example, the annual harvest on Mitkof, Kupreanof, Kuiu, and adjacent islands increased more than 10-fold from 1973 when 29 bears were killed to 314 during the 2000–01 regulatory year (Lowell 2002). This area has been receiving substantial hunting pressure because it is widely recognized for producing trophy black bears. Kuiu Island accounts for the bulk of the harvest (Lowell 2002). The expanding harvest of black bears is compounded by the increasing density of roads that are being constructed concurrently with logging in the southern islands.

Bear Viewing

Bear viewing has been growing in popularity throughout Alaska. In Southeast, three recognized areas have excellent opportunities for black bear viewing. Annan Creek Wildlife Viewing Area, located in the Tongass National Forest on the mainland halfway between Wrangell and Ketchikan, is the best known and most established area (Fig. 4). A U.S.



FIG 4. Aerial view of the mouth of Annan Creek on the northern base of the Cleveland Peninsula south of Wrangell. Annan Creek Wildlife Viewing Area—managed by the Forest Service—is one of the best areas in the state to view black bears. Both brown and black bears occur in this mainland watershed. (John Schoen)

Forest Service (USFS) permit is now required for access to this popular area where black bears are common and brown bears occur in lower numbers. The Fish Creek Bear Viewing area in Misty Fjords National Monument near Hyder is also growing in popularity.

On the Cassiar Highway, this area has received substantial human use in recent years. Both black and brown bears can be observed from the USFS observation deck as they fish for spawning salmon. The Chilkoot River State Recreation Site near Haines also provides the public an opportunity to view fishing bears. In addition to use of these developed sites, many local residents and tourists take advantage of black bear viewing on an opportunistic basis, particularly along coastal streams and estuaries on the mainland coast and southern islands of Southeast.

Special Management or Conservation Designations

The black bear is identified as a Management Indicator Species (MIS) under the USFS Tongass Land Management Plan Revision (TLMP) of 1997 (USFS 1997). MISs are selected by the USFS for emphasis in planning and are monitored during forest plan implementation to assess the effects of management activities on their populations and the populations of other species with similar habitat needs that the MIS may represent (USFS 1997).

HABITAT RELATIONSHIPS

Unlike for brown bears, very little quantitative data on the seasonal habitat relationships of black bears in Southeast is available. Information is largely limited to descriptive observations of black bears as well as some ancillary information from a denning study on Mitkof Island (Erickson et al. 1982) and a population and genetics study of black bears on Kuiu Island (Peacock 2004). The following information on habitat relationships of black bear was compiled from the studies cited above, general observation, published accounts from similar areas, and assumed similarities to Southeast brown bears.

Because bears are large bodied, are relatively inefficient at digesting low-quality forage, and remain dormant for approximately half the year, they must concentrate their foraging activity on abundant, high-quality foods. Bears have adapted to periods of food scarcity by seeking secluded refuge in a dormant state in winter dens. Winter denning enables bears to reduce their high metabolic costs of activity and draw on their accumulated fat reserves until high-quality food again becomes abundant. Dens also provide a secure place for pregnant females to give birth from one to four tiny cubs, usually in January. In Southeast, some bears may only be active for about half the year. With such a

short active season, bears must concentrate their food gathering on the most nutritionally productive habitats.

Little information is available on home range and movements of black bears in Southeast. In two study areas on the mainland near Juneau, however, home ranges of 7 and 12 black bears ranged from 4 to 5 mi² (10 to 13 km²) (Barten 2002).

Spring and Early Summer

Most black bears in Southeast probably emerge from winter dens during April and May. Presumably like brown bears, males leave their winter dens before females, particularly females with spring cubs. Following den emergence, many black bears are observed foraging on tidal sedge flats and south-facing avalanche slopes for newly emergent sedges and other vegetation. Erickson et al. (1982) observed bears feeding on green vegetation in south-facing clearcuts (<25 yr) on Mitkof Island.



FIG 5. Kadake Creek on northern Kuiu Is. is used extensively by black bears for fishing on spawning salmon during late summer. Smaller, more fishable streams, appear to be preferred by black bears and many different bears use these streams for short periods of time. (Lily Peacock)

Mid-Summer and Fall

By mid-summer, many black bears in Southeast seek out anadromous fish streams where they fish for spawning salmon (Fig. 5). The additive costs of hibernation, gestation, and lactation put great energetic demands on female bears (Watts and Jonkel 1988, Farley and Robbins 1995), and reproductive success is strongly correlated to fall body weight in black and brown bears (Rogers 1976, Schwartz and Franzmann 1991, Hilderbrand et al. 1999a). The availability of spawning salmon as a food resource in summer and fall

positively affects body size, reproductive success, and population density of brown bears and represents a major influence on bear habitat quality (Hilderbrand et al. 1999a). Coastal brown bear populations in Alaska, where salmon are abundant, occur in significantly higher densities (up to 80 times more) than interior bear populations without salmon (Miller et al. 1997). It is assumed that a similar relationship applies to black bears throughout their range in Southeast.

Peacock (2004) observed large numbers of black bears using salmon streams on Kuiu Island and measured bear densities there that are among the highest in North America. On northern Kuiu Island, Peacock et al. (in review b) used genetic marking to estimate from 22 to 120 black bears per 1,640 ft (500 m) of stream reach over a 2-month period. Smaller (presumably more fishable) streams had higher numbers of bears, and turnover of individual bears was high on each stream, allowing many different bears to use those streams. On the mainland at Annan Creek, Chi (1999) visually documented 12 female and 16 male black bears along a 1,312-ft (400-m) stream reach. Although Annan Creek had a lower density of bear use than recorded on northern Kuiu Island, brown bears (which dominate and displace black bears) also occur at Annan Creek, and bear use during hours of darkness was not recorded. On the British Columbia coast, as much as 98% of black bear use of salmon streams occurred after dark (Reimchen 1998).

On Mitkof Island, Erickson et al. (1982) determined that black bears used riparian habitat and salmon streams less than their availability within the study area. However, this apparent avoidance may have been compounded by daytime observations, human activity, and fishability of the streams. Stream geomorphology influences accessibility to fish and likely affects bear use of and behavior in different stream types (Gende et al. 2004a; Peacock, unpublished data).

Clearly, salmon spawning streams and the riparian habitat associated with them provide important summer and fall foraging habitat and support high densities of black bears throughout their range in Southeast (Fig. 6). On the mainland, where black bears overlap with brown bears, black bears may use salmon streams less frequently to avoid conflict with dominant brown bears.

During summer and fall, black bears also consume abundant berries when available, including salmonberries (*Rubus spectabilis*), blueberries (*Vaccinium sp.*), currants (*Ribes spp.*), and devil's club



FIG 6. A black bear female and 2 cubs walking a salmon stream in the fall searching for fish. (Bob Armstrong)

berries (*Oplopanax horridus*). The berry of the devil's club plant is considered one of the most important black bear foods on the Kenai Peninsula, and its abundance appeared to influence black bear reproduction (Schwartz and Franzmann 1991). Habitats with abundant berry crops include riparian forest (salmon berry, currants, devil's club), avalanche slopes (salmon berry, currants, devil's club), young clearcuts (salmonberries, blueberries), and alpine-subalpine ridges (blueberries).

Late-Fall Denning

By early October, the first winter snowfall generally occurs in the high country and most herbaceous forage is unavailable after the first frosts. Winter denning begins in October and November. Erickson et al. (1982) determined that 100% of bear dens of 13 radio-collared black bears on Mitkof Island occurred in old-growth trees, snags, or hollow logs. Large-tree structures were considered important for denning because of the heavy precipitation and poorly drained soils in the region. Bears require large-diameter trees and snags for denning. Because large trees and snags occur only in old-growth forests (Kramer et al. 2001), old growth represents important winter denning habitat.

Habitat Capability Model

To evaluate black bear habitat values within watersheds and compare watershed values within biogeographic provinces, the TLMP model for brown bear habitat capability (Schoen et al. 1994) was used as revised by an interagency team of biologists. The brown bear model was chosen based on the assumption that it reasonably represented similar habitat

relationships for black bears, which have been largely unstudied in Southeast. Habitat values were rated, using habitat preference data from Schoen and Beier (1990), on the basis of their value to bears during late summer. During this time, bears are most concentrated. They are feeding on salmon to build up fat reserves for denning and are vulnerable to human activities in the low-elevation coastal riparian zones. In particular, the late summer season, when most bears concentrate to feed on spawning salmon, is considered critical for bears in Southeast.

The model evaluates habitat capability on a landscape scale based on habitat characteristics and proximity to human activity. Habitat types specified in the model include riparian forest, beach-fringe forest, upland forest, clearcut or second growth, subalpine forest, avalanche slopes, alpine tundra, and estuary. Riparian forests were identified with a landscape-based model and further subdivided by presence or absence of anadromous salmon. Additional model details (including habitat coefficients) and results are presented in Chapter 2. Black bear habitat values of watersheds are ranked within each biogeographic province and presented in a watershed matrix for Southeast (Appendix B).

FOREST ECOLOGY AND MANAGEMENT

Ecosystem Consequences of Bear-Salmon Relationships

It is assumed that black bears have a relationship to riparian ecosystems similar to that documented for brown bears in Southeast. Bears often carry captured salmon to the riparian forest where they are only partially consumed. This sequence, capture-carry-partial consumption, represents an important process for the riparian ecosystem in Southeast because it makes a tremendous amount of salmon-derived nutrients and energy available to riparian biota (Gende et al. 2002). For example, salmon, which are rich in nutrients and energy, can represent an important food source for scavengers that feed on carcasses abandoned by bears in the riparian area. The nutrients from carcasses and bear scat also leach into the forest soil and are taken up by riparian plants, including trees (Ben-David et al. 1998, Hilderbrand et al. 1999b). Growth rates of plant have also been correlated with the amounts of salmon-derived nitrogen available to them, particularly in areas where bears typically carry the fish to be consumed (Helfield and Naiman 2001, but see Kirchhoff 2003). The ecological importance of

bear-salmon relationships to the forest ecosystem is just beginning to be understood. Clearly, the inter-relationships among salmon, bears, large-tree forests, and other myriad organisms are complex and critically important to the integrity of this productive and increasingly rare ecosystem.

Forest Composition and Ownership

The majority of the forested land in Southeast occurs in the Tongass National Forest, which makes up 80% of the Southeast land base (USFS 2003). About two-thirds of the Tongass Forest is forested, although productive old growth encompasses only 5 million acres (2 million hectares), or about 30% of the land area of the Tongass (USFS 2003). The majority of productive old growth on state and private lands has already been harvested during the last 40 years (USFS 2003). Old-growth forests are diverse and highly variable in structure. In the most productive stands of old growth, individual trees may be 4–8 ft (1.2–2.4 m) in diameter and more than 200 ft (61 m) in height. These large-tree stands are rare in Southeast, representing only 3% of the Tongass land base (USFS 2003). Stands of riparian spruce forests with very large trees (Fig. 7), largely confined to valley bottom flood plains, are rare, representing less than 1% of the Tongass land base (USFS 2003). For details about the ecological structure and composition of old growth, see Chapter 5.

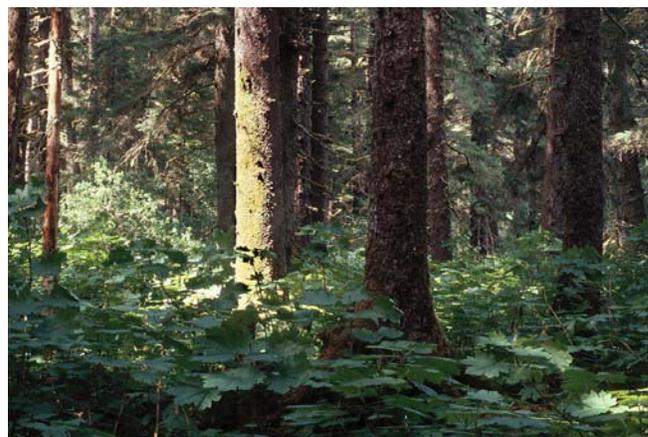


FIG 7. Large-tree riparian spruce forest in Southeast. Such stands are used by bears for feeding and resting habitat. A variety of berries occur in these stands, including devil's club berries, salmon berries, and currants. (John Schoen)

Timber Harvest

Clearcutting is the dominant timber harvest method in Southeast (USFS 1997). Forest succession in Southeast following clearcutting has been described by

Harris (1974), Harris and Farr (1974, 1979), Wallmo and Schoen (1980), and Alaback (1982). In general, after logging, herbs, ferns, and shrubs grow abundantly for several years and peak at about 15 to 20 years. At about 20 to 30 years, young conifers begin to overtop shrubs and dominate the second-growth stand. After 35 years, conifers completely dominate second growth, the forest floor is continually shaded, and forbs, shrubs, and lichens largely disappear from second-growth stands (Fig. 8). The absence of vascular plants under second growth generally persists for more than a century following canopy closure (30–130 yr). Consequently, clearcutting old growth and managing second growth on 100- to 120-year rotations significantly reduces foraging habitat for most wildlife species for 70–80% of the timber rotation (Harris 1974, Wallmo and Schoen 1980, Alaback 1982). Although riparian large-tree old growth represents a small proportion of the land area in Southeast, these stands have been disproportionately harvested throughout the region (USFS 2003).



FIG 8. An even-aged second growth forest 60 years old has low value as foraging habitat for bears. (John Schoen)

IMPLICATIONS FOR CONSERVATION

In general, the high ability to learn, omnivorous diet, and opportunistic behavior of bears have allowed them to exploit a variety of food resources over a wide range of habitats. Because bears have relatively inefficient digestive systems for processing low-quality forage (Bunnell and Hamilton 1983) and are active for only a portion of the year, they must exploit the most valuable feeding areas. This feeding requirement often brings them into contact with humans using the same productive lands (such as coastal areas, valley bottoms, and fish streams).

Bears are large occasionally dangerous animals

capable of injuring or killing humans. This potential danger has shaped human attitudes toward bears and resulted in significant and often unjustified killing of bears by humans. Because bears have low reproductive rates (Bunnell and Tait 1981), their populations are particularly vulnerable to increased mortality. Black bears are less vulnerable than brown bears because they have higher reproductive rates and are more secretive and less aggressive than brown bears.

An evaluation of bear habitat requirements must also integrate the effects of human activities and land uses (Schoen 1990). Forest management influences habitat quality for bears and also expands road infrastructure, which increases human access (Schoen 1991). Although old-growth forest habitat appears to be used extensively by black bears in Southeast, young clearcuts are also used by black bears for foraging habitat. On Mitkof Island, Erickson et al. (1982) reported that radio-collared black bears used old growth in proportion to its availability but used young clearcuts (<25 yrs) in greater proportion than its availability. On Long Island off the Washington Coast, Lindzey et al. (1986) reported densities of black bears (older than 1 yr) of 4.1 bears/mi² (1.57 bears/km²) in 1975. At that time, productive clearcuts (<25 yr) with abundant berry crops occurred on about 38% of the island. By 1982, the bear density had declined to 2.6/mi² (1/km²). Recruitment of new bears into the population also declined, and dispersal and mortality increased as conifers shaded out clearcuts. Food resources on the island peaked in the early to mid-1970s, but as the conifer canopy closed over food resources, bear foods declined, and in 1980, bear carrying capacity was estimated at only 50% of that in 1973 (Lindzey et al. 1986). The conversion of old-growth forest to a mix of clearcuts and second growth (roughly 25% clearcut and 75% second growth over a 100-yr timber rotation) can be expected to reduce both foraging and denning habitat for black bears in Southeast.

Roads generally result in harmful impacts to large carnivores (Noss et al. 1996, Trombulak and Frissell 1999). The construction of roads into roadless black bear habitat will increase human access, which will likely increase the direct mortality of bears through legal hunting, kills in defense of life or property, illegal killing, and road kills (Fig. 9). The relationship between roads and brown bears has been described by numerous investigators (McLellan and Shackleton 1989, Titus and Beier 1991, Schoen et al. 1994, Mace et al. 1996, Apps et al. 2004).



FIG 9. Aerial view of east central Mitkof Island south of Petersburg showing a forest mosaic of muskeg bogs, old growth, second growth, and clearcuts with an interconnected road system. Roads enhance human access and the probability of increased human-bear interactions which can result in elevated mortality pressures on bears. (John Schoen)

In Southeast, black bears are likely most concentrated during late summer in riparian forest habitat associated with anadromous spawning streams (Peacock, personal communication 2005). Maintaining important riparian habitat and abundant salmon runs is considered essential for maintaining productive brown bear populations in Southeast (Schoen et al. 1994, Titus and Beier 1999) and is likely also important for black bears. The maintenance of riparian buffers along anadromous salmon streams is also vitally important for sustaining productive salmon runs (USFS 1995). Although riparian forests make up only a small portion of the land base of Southeast, they have been disproportionately logged (Shephard et al. 1999, USFS 2003).

In 1996 and 1997, the USFS convened a brown bear risk-assessment panel to assess the likelihood that the alternatives in the revision to the TLMP would result in habitat sufficient to support viable and well-distributed brown bear populations across their historic range in the Tongass National Forest. One major finding of the panel was that an undisturbed buffer (no harvest, no roads) along salmon-bearing streams where bears concentrate and feed helps to maintain brown bear habitat (Swanston et al. 1996). The final TLMP record of decision (USFS 1997) established riparian buffers for brown bears where an evaluation supported additional protective measures. There are no requirements in the TLMP for black bear riparian buffers. The brown bear risk-assessment panel also stressed the importance of maintaining roadless reserves distributed throughout the range of brown

bears. The TLMP fish and riparian risk-assessment panel also identified roads as a high risk factor for anadromous fish. It is reasonable to assume that maintaining a network of roadless reserves also would be a sound investment for black bear conservation throughout their range in Southeast. Based on this conservation assessment, Southeast provinces with the greatest impacts on black bear habitat were North Prince of Wales, Etolin / Zarembo, Kupreanof / Mitkof, and Kuiu which have lost 52%, 35%, 33%, and 30% of their original habitat value, respectively (refer to Chapter 2).

Conservation of black bears in Southeast will require a comprehensive assessment of bear habitat relationships and a better understanding of the effects of forestry and roads on bear populations. Little habitat research has been conducted on black bears in Southeast, and this lack of information must be corrected. Black bear conservation will be enhanced by the protection of key habitats, including important feeding and denning habitats, and management of mortality rates within sustainable levels. Maintaining the productivity of Pacific salmon stocks throughout Southeast is an essential component for conserving productive bear populations (Fig. 10). To ensure that black bear populations are well represented throughout their natural range in Southeast and available for human use and enjoyment, watersheds with a variety of high-value habitat should be identified and protected at the watershed scale within each biogeographic province that supports productive bear populations (Fig. 11).



FIG 10. A black bear walking through a riparian area adjacent to a Southeast salmon stream. Riparian habitats are important to bears during summer and fall when they feed on spawning salmon, berries, and sedges. (John Hyde)



FIG 11. Vixen Inlet on the Cleveland Peninsula north of Ketchikan is one of the highest value bear habitats in the Revilla-Cleveland Province. Intact watersheds with a variety of habitats and productive salmon streams provide important habitat for bears. (John Schoen)

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