



Hidden in the Shrubs:

by Keith Slauson with Bill Zielinski and Carlos Carroll



It's the afternoon of a warm July day and we're preparing to hike 600 feet down a steep slope to check on site #018. Our destination is two baited track plate stations located in an unnamed tributary of Goose Creek, which drains into the South Fork of the Smith River. Site #018 is only one of over 160 sites that will be surveyed over the next two years as part of an intensive effort to understand the ecology of the American marten (*Martes americana*) in the forests of coastal northwestern California. During the previous two weeks, our surveys confirmed that both stations at site #018 have been consistently visited by at least one marten. However yesterday was the 16th and final survey day at this site, and following our research protocol, I had replaced the track plate stations with modified live-traps in hopes of

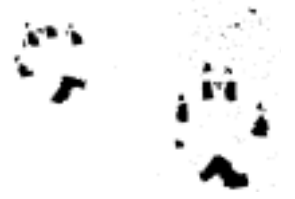
In my company is Bill Zielinski, who just four years previously, announced to the world the grim possibility that the Humboldt marten-- a recognized subspecies of the American marten that is endemic to northwestern California and extreme southwest Oregon - was extinct. This conclusion resulted from the lack of any verifiable evidence of the animal's existence across its entire historical range over the last 50 years. Failure to detect the Humboldt marten was not due to any lack of effort, as nearly

35,000 survey nights were logged using baited track plates and remotely operated infrared camera systems placed throughout the forests of northwest California.

Humboldt martens were once common in the narrow coastally-influenced forest belt extending from sea level to about 3,000 feet in Curry County Oregon south to Sonoma County California. Highly sought after for their beautiful pelts, old trapping records indicate that individual trappers would routinely capture 35 to 50 animals in a single winter. A few martens were still being taken in the early 1940's, but since then no verified records of this animal have been made.

Ironically, during the same week that their potential extinction was being discussed at a scientific meeting, a marten boldly left its tell-tale prints at a track plate station located in a remote

Rediscovery of the Humboldt Marten?

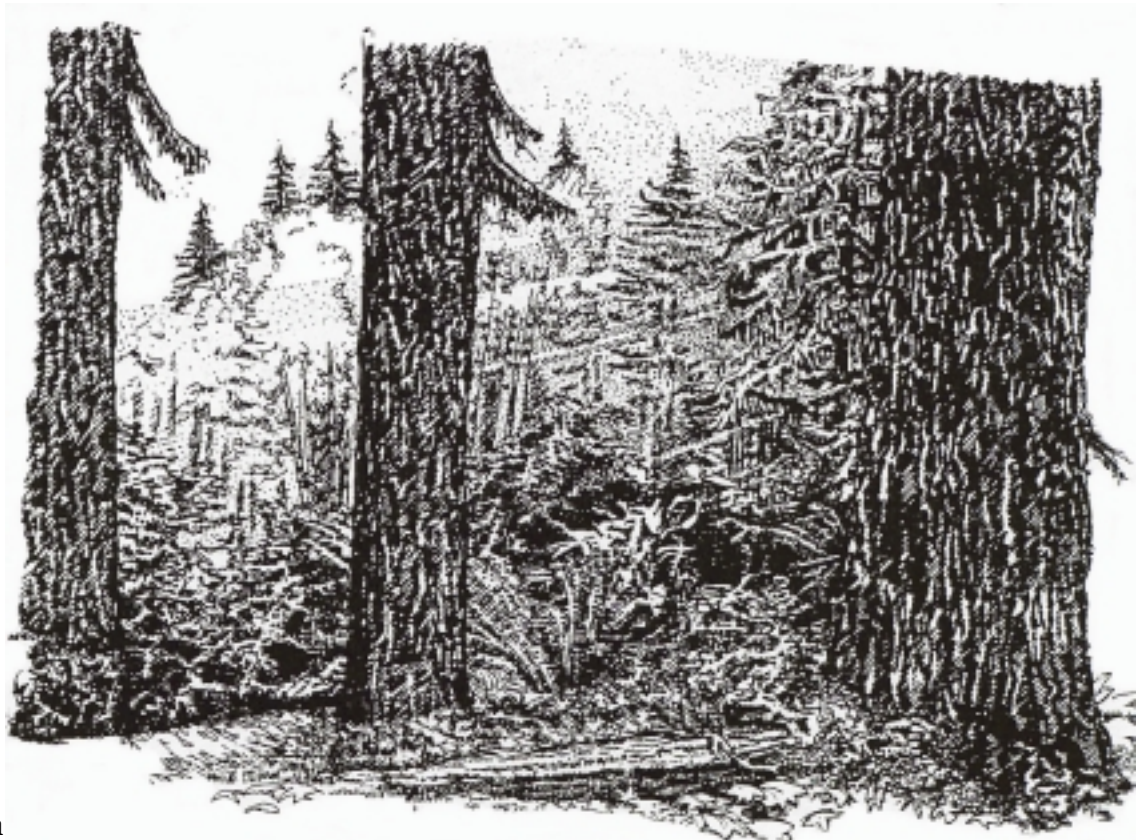


drainage of the southern Siskiyou, on the Six Rivers National Forest. The next year (1997), a second marten was confirmed about 20 km away from the first. Over the next two years, similar surveys conducted within the vicinity of these initial locations produced 14 additional marten detections, providing conclusive evidence that at least one remnant population still persists in a remote corner of its historical range.

As Bill and I near the lower portion of the slope, we pass through an opening and get a clear view of the forest stand where the two survey stations of site #018 lie. We pause and discuss the characteristics of this forest, which are consistent with our emerging picture of the habitat that martens are using in this region. Site #018 lies in an old-growth Douglas-fir stand, with a well-developed second tree layer of hardwood trees (mostly tanoak and Pacific madrone), and a

dense shrub layer. The marten's strong affinity for older forests is not surprising, given their close association with similar habitat in many other portions of their range in North America.

However, most but not all of our sites where martens have been detected are in mature and old-growth forests. We've been surprised to find that a significant number of marten detections have also been made at sites located in very open, park-like forests of western white and lodgepole pine that are mostly found in association with serpentine soils. These open pine forests lack some of the key habitat features - particularly large standing dead trees (snags) and down logs - that martens rely heavily on as daily resting





One of our least familiar mammals, the marten is a member of the weasel family (Mustelidae) that also includes mink otter, skunk, badger and wolverine. With a size up to two feet long including a bushy seven-inch tail, the marten is reminiscent of a small house cat but with a more pointed snout and shorter legs. Very arboreal and chiefly carnivorous, their diet primarily consists of rodents, small birds, insects and berries. Photo by D. Hartman

sites and as secure places for raising litters of kits.

What these serpentine- pine sites lack in terms of snags and logs, they apparently make up for with rock piles and rock outcroppings. It appears that the hiding places created by the presence of abundant- large rocks and boulders likely provide suitable resting and den

locations for martens, as well as-habitat for prey species, such as golden-mantled ground squirrels and chipmunks. While these forests may look very different from old growth to us, from the perspective of a marten they may be equivalent in that they both provide dense overhead cover - in the form of either shrubs or trees - as well as sites that are suitable for resting and denning.

Our travel route now enters the forest and we're forced to weave snake-like between, under and over the dense chest- and head-high layer of shrubs, mostly comprised of rhododendron, salal and evergreen huckleberry. An occasional downed log provides a welcome break from the shrub-stomping-and a chance to inventory our new cuts and scrapes, apparently the toll levied for passage through this Siskiyou jungle. While the shrub layer may create a formidable challenge to travel for us, it seems to be present at most of our sites where martens have been detected, and may be one of the most important habitat features for them in our area.



Historical distributions of the Humboldt (M.a.h.) and Sierran (M.a.s.) subspecies of marten in northwest California. The collection of four dots within the historical range of the Humboldt subspecies represents the current distribution of the only known population for this region. The historical range of the Sierran subspecies is included without current distributional information. .

Martens are only about a foot and a half to two feet long and are susceptible to being preyed on by a variety of other mammalian and avian carnivores, particularly bobcats, northern goshawks, and fishers. The fisher (*Martes pennanti*), a close relative of the marten and likely their most fierce competitor, seems to avoid these dense shrubby areas, perhaps for the same reason that we normally would -

travel is difficult. The smaller marten, however, may be just the right size to move and hunt effectively under the shrubs and claim the position of "top carnivore" here. In fact, we've detected very few carnivores other than martens in these dense shrubby habitats.

Bill and I walk the length of a down log, wade back into the huckleberries and soon arrive at the first live-trap, which sits open and unvisited. I change the bait and check around the site for fresh scats, which would indicate. that a marten had visited the vicinity but decided against entering the trap. But today at this site. there is not hide nor hair nor scat of our- elusive friend. After scribbling a few notes in my notebook we exchange a few more words about the site and push on.

The route from here to the second station becomes an almost impenetrable sea of shrubs and we're forced to resort to what we call the "brush stroke" - using both arms to part the branches and pushing our bodies forward, one shrub at a time. As we slowly approach the second live-trap, we peer through the salal and rhododendron to find a pair of lustrous black eyes tracking our every move. Without uttering a

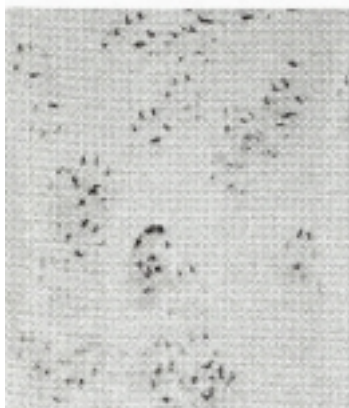
word, we stop and retract our steps, immediately realizing that the owner of the pair of eyes beaming from our trap is an American marten.

At a safe distance away from the occupied trap we sit and exchange whispers: "Looked small, might be a female ...let's radio the rest of the team." Within minutes, several other field biologists have retrieved the capture kit from the rig and are descending down the slope toward us. "I didn't see much coloration in the throat area," says Bill. This observation is noteworthy because one of the diagnostic characteristics of the Humboldt marten is reduced throat coloration. Most other subspecies of martens in North America have a conspicuous patch of creamy-orange fur in the *gular*, or throat region. This one doesn't.

The Humboldt subspecies of the American marten was first described by Joseph Grinnell and Joseph Dixon in 1926. Skeletal measurements and differences in coloration were used to distinguish *humboldtensis* from the *sierrae* subspecies located to the east (the closest population in the eastern Marble Mountains and Trinity Alps) and the *caurina* subspecies (Oregon Coast Range and Cascades) to the north. Debate still exists over whether or not these subspecific



A photo of one of the track plate stations used in our marten surveys (top). Animals enter the trap to get to the bait against the back wall (in this case, a chicken drumstick), walk across an aluminum plate covered with a thin film of carbon soot and then onto a sticky piece of contact paper, where they leave behind a set of detailed track impressions (bottom).



The photo to the right, taken at an automatic infrared camera station in July, 1996, was one of the first pieces of evidence that the Humboldt marten may still exist in northwest California, and eventually led to the current multi-year study.



designations are valid for the American marten. There is also the small chance that the population we're studying here could have originated from dispersing animals belonging to one of the other two subspecies.

In order to unequivocally answer the question of subspecific identity, we need a set of genetic samples from the martens in this population, which is one of the main reasons for live-trapping a few of these animals. The genetic material can also be used to identify individuals and assess the level to which, if any, inbreeding has occurred. Low genetic variability - a good measure of inbreeding - would be an indicator of a very small population and a warning that drastic actions may be necessary to avoid local extinction.

After the rest of the capture team arrives, we prepare the site and organize the equipment needed in the process of immobilizing and handling the animal. Next we rehearse each of our roles, so that the process moves quickly and efficiently. We'll only have about fifteen minutes time to collect information on sex, reproductive status, tooth wear, ear-foot-tail-total length, weight, coloration, and general condition, while also monitoring internal temperature and respiration rate. Now we move to the live-trap, gently coax the marten into a handling cone and inject a short-acting immobilizing drug.

With the marten immobilized on the processing mat we confirm that it is a female, and to our excitement determine that she is lactating! This is very important information for two primary reasons. First, reproductive females generally require the highest quality habitat (many suitable den sites, abundant prey) and we'll now be able to factor this into our analysis-of the-habitat around site #018. Second, knowing the proportion of females that are reproductively active allows for a more precise estimation of the reproductive potential of the population. These understandings are likely to factor heavily into any future conservation planning efforts.

"Total length: 53.5 centimeters, weight: 600 grams," says Bill. The Humboldt marten is the smallest subspecies of American marten, and our measurements are within the range of those recorded by Grinnell and his colleagues. The coloration of the gular is very restricted and patchy, again consistent with Grinnell's original description. While genetic analysis- will be necessary to provide the final confirmation, these data are a good indication that we hold in our hands a member of perhaps the last remaining population of this beautiful animal, one that many of us feared was probably gone forever.

The marten is now back in the live-trap for a brief recovery period before being released. While she's waking up and getting oriented, we place a narrow tunnel with a carbon-sooted floor up against the live-trap exit door. Thus, when this female walks out of the trap, she'll leave behind a set of tracks that will help us determine the sex and perhaps the individual identity of martens that visit track plate stations elsewhere in our study area (see accompanying photos).

A final check on her after ten minutes in the trap reveals that the marten is completely recovered, alert and ready for release. We position ourselves behind the live-trap and remain silent, while I slowly slide the door open. A few moments pass, and then with a flash she quickly bounds out of the tunnel, across the track plate and back into the shrubs from-whence she

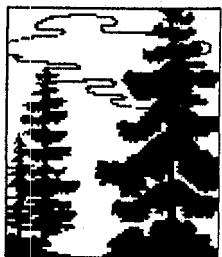
came earlier that day. It was nice to watch her go, and I thought of where she'd be in the coming days, a bundle of furred energy scampering along the branches of old-growth firs and under cover of all these shrubs, wreaking havoc and despair among the order *Rodentia*.

This animal and the others detected (14 sites) and/or live-trapped (8 individuals) during the first year of our study have provided a tremendous amount of information on the unique ecology of what appears to be *Martes americana* ssp. *humboldtensis*. It's been gratifying to discover that this creature does not belong on some list of extinct species but is still out there, hidden in the shrubs all these years. And with a better understanding of their habitat requirements provided by this study, we hope to ensure that the Humboldt marten will always find a home here. ✱



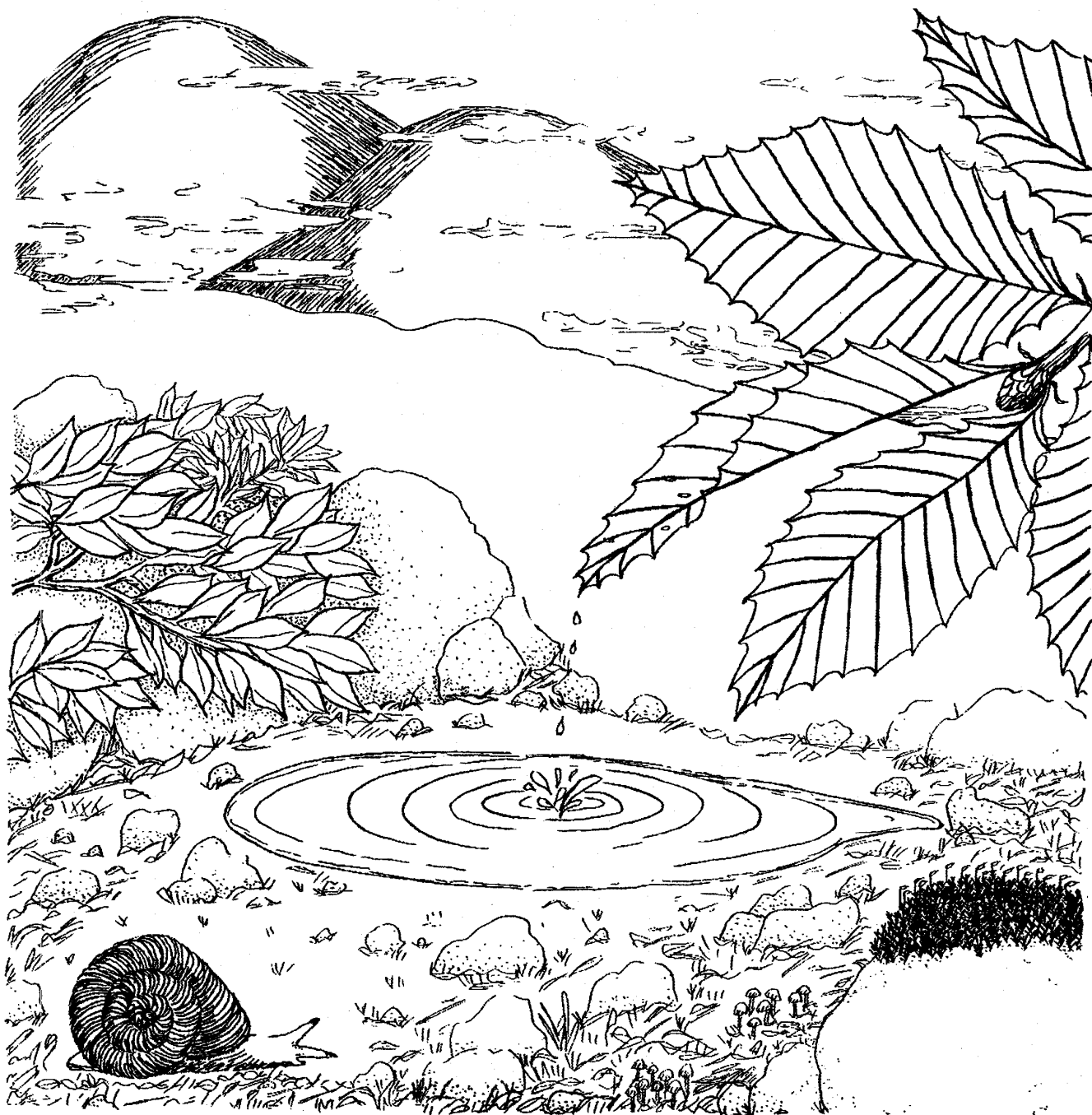
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