

Comparison Chart – The Weasels

FAMILY: Mustelidae	Least Weasel Subfamily: Mustelinae <i>Mustela nivalis</i> (previously <i>M. rixosa</i>)	Short-tailed Weasel Subfamily: Mustelinae <i>Mustela richardsonii</i> (previously <i>M. erminea</i>)	Long-tailed Weasel Subfamily: Mustelinae <i>Neogale</i> (was <i>Mustela</i>) <i>frenata</i>
Length, total Length, head+body Length, tail tail, relative to body Weight	17-25 cm (6¾ – 9¾") 15-25 cm (5⅞–7 ¼ "¹; 5–10"²) 2-3 cm (⅞– 1¼") 10– 15% 28 – 84 g ♂ (<25cm) larger than ♀ (<22cm)	19-34 cm (7½ – 13½") 25-33 cm (5⅞–11¹; 7–13"²) 4.8-9 cm (1⅝– 3½") ~ 25% 45 – 182 g ♂ 2x size of ♀	300-350 mm ⁶ (11 – 22") 20-40 cm (7⅞–15⅝"¹; 9–10"²) 8-16 cm (3⅞ – 6⅜") 50 – 100% 85 – 267 g ♂ 2x size of ♀ \bar{x} = ♀ 111 g; ♂ 195 g; juv ♂ 162 g
Physical Description	Tiny. Dark brown above, white below. Tail very short and all brown. Feet white. Turns white in winter in the northern part of range. Often has an individually distinct brown spot on chest at 18 days which disappears after 4 months of age.	Dark brown above, white below; brown tail with black tip. Feet white. Turns white in winter w/black tail tip in the northern part of range. No chest markings, but infants have a distinctive mane as their fur comes in.	Brown above, white to deep yellow below. Brown tail with black tip. Feet generally brown. Tail often equal to head+body length. Turns white in winter w/black tail tip in northern part of range. May have light spot/s on chest developing at 35 days. SW U.S. and FL populations may have white or yellow facial markings.
Breeding	Mates year round <i>with no delayed implantation</i> ⁶ ; young born after \bar{x} =35-day gestation. ♂ and ♀ are sexually mature at 3-4 months although they seldom breed until > 10 mo	Mates in June-July <i>with delayed implantation</i> . Young are born following spring after 27-day active gestation ♂ are sexually mature at 14 mo and ♀ at 1-5 mo; ♀ infant is often bred by same male breeding with her mother, giving birth the following spring.	Mates mid-summer <i>with delayed implantation</i> ; young are born the following spring after a 24-day active gestation. ♂ mature during 2 nd summer; ♀ at 3-4 months.
Litter, size & description Larger litters are more common in the northern part of range.	Up to 3 litters per year of 1-6+ young (\bar{x} =4-5); usually born in early spring and mid-summer, often in abandoned burrows of another animal. Documented births (in the wild) in every month. ³	1 litter of 4-9 young (\bar{x} =6); born in late spring; blind with fine hair. Mane present at birth and continues to develop as fur comes in (14 days). Male may help care for the young.	Litter size \bar{x} =6-7 but wide range (<4 to >9). Born blind and nearly naked in late spring, but quickly covered with fine white fur.

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Weight at birth	\bar{x} =1.4 g	\bar{x} =1.7 g	~3 g
Hair appears	By 4 days of age covered with fine white hair. ⁴	Fine white hair within first day.	Born with a few sparse long white hairs on back and head. >1 day covered with fine white hair. ⁴
Begins to crawl	4 days	“early”	14 days (♂), 14-21 days (♀)
Brown dorsal fur appears	18 days Hair comes in fast; at 18 days has brown/white coloring.	21 days @7 days demarcation apparent; @14-21 days heavy mane contrasts with “scantily white furred animal” ⁴	28-35 days @ 3 weeks dark line of demarcation and tail tip is black. @ 5 weeks brown top and bottom light (white – yellow/tan)
Ears open Often concurrent with eyes opening	21-28 days ⁴	35 days ⁴	21-28 days ⁴ , 35 days ⁶
Eyes open	26-30 days ⁴	35 days (blue at first) ⁴ 36-41 day, ♀ before ♂ ⁵	35-37 days ⁴ , 5 wks ⁶
Black tail tip appears	N/A	45 days (in England) ⁴	21 days ⁴
Weaning Continues limited nursing until dispersal at 3-4 mo	@14 days begins to suck and chew on pieces of mouse; Eating solid food > 18 days ⁴ Weaning Initiated at 32 days and continues until 42-56 days ⁴ . Disperse at 4 mo.	Consumes meat at 21-28 days and by 35 days is eating >50% BW in meat (continues to nurse until dispersion) ⁴ Juveniles begin hunting at 10-12 weeks.	Consumes meat at 21 days and by 36 days are eating ½ to nearly their own weight in meat/day. ⁴ At 7-8 weeks the ♂ are already larger than their mother.
First kills prey	6-7 weeks At 40 d mother begins training, and young are adept at 42-45d. Orphans 1 st become adept at killing at 50-60 days. ¹	80 days (Europe)	> 7 weeks ⁶
Growth complete Disperses at 13-18 weeks	Reaches adult length at 8-12 weeks and adult weight at 12-15 weeks. Adult male consumes >40% BW/day	--	♀ slows growth ≥ 8 wks.; both sexes at adult size ≥ 12 wks. Consuming 28-38% BW/day
Kills prey by =====> Killing move is instinctive but efficiency improves with training/experience.	Grabs prey by the nape then bites through the base of the skull and/or throat area, often wrapping body and legs around the prey. Eats the entire animal (skin, intestines, bones, etc.). Prefers head/brains, then inner organs and muscles, and will eat those first (which is useful to know for medicating purposes – inject the brain of the prey food).		

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Activity Killing technique is instinctive but hunting is a learned behavior.	Day and/or night, all seasons. Very rarely seen as they stay undercover.	Active both day and night. Hunts mainly on the ground but can climb and even pursues prey into the water.	Most wide-spread carnivore in the Western Hemisphere. Active both day and night. Hunts mainly on the ground but will also climb trees and go into nests.
Vocalization	Murmurs, chirps, purrs. When disturbed may give a shrill squeaking call, and may also hiss when threatened.	Grunts, murmurs, hisses, chatters, shrill (and very loud) alarm call. Murmur and purr when interested or content.	Screech and squeal, rapid trill, murmur and purr when interested or content.
Habitat The range of the male is generally larger than the range of the female; larger ranges in wooded environment vs open. All require fresh water within their home range.	Grassy and brushy fields, marsh areas. Known to climb trees/brush/logs but active primarily underground and under vegetation following mouse/vole burrows. <ul style="list-style-type: none"> - Unlikely to dig their own tunnels unless soft substrate but will take abandoned burrow of another small mammal, adding mouse hair to the dried grass lining the nest. - Solitary as adults. - Home range 7-24 acres² - Home range < 2 acres¹ - Usually found ≤ 60 yards from burrow 	Varies: open woodland, brushy areas, grasslands, wetlands, and farmland. Dens may be appropriated from chipmunks, often found in or beneath a log, stump, roots, brush pile, or stone wall. Readily climbs trees and other objects; will swim if necessary. Also known to inhabit human residences. <ul style="list-style-type: none"> - Known to live both solitary and in a group. - 2-5 favorite denning sites and 3-10 daytime resting places. - Home range 2.5-12 acres in open grassland; ♂: 17-37 acres in woods, and ♀: 2.5-10 acres in woods² 	Varies: forested, brushy, and open including farm land, preferably near water. Dens in abandoned burrows, making a nest lined with hair from prey. Will climb trees when chasing prey. <ul style="list-style-type: none"> - Solitary except males <i>may</i> assist with providing food for young (probably in exchange for breeding rights). - 2-5 favorite denning sites and 3-10 daytime resting places. - Home range 2.5-12 acres in open grassland; ♂: 17-37 acres in woods and ♀: 2.5-10 acres in woods² - Presence of water primary factor \bar{x} distance from den: 100yds, max distance from den: 220 yds
Prey The size of the weasel heavily influences ability to take different prey. Largest males take the largest prey.	Almost exclusively preys on voles/mice. Males esp. will occasionally eat shrews, moles, birds, and insects if mice are scarce. Adults consume ~40% BW/d over 5-10 meals.	Mice and voles are preferred prey but diet may also include rats, chipmunks, shrews, baby rabbits, birds, frogs, lizards, and insects.	Mice and voles are preferred prey but diet may also include rabbits, shrews, chipmunks, rats, birds & poultry, and occasional insect or worm.

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Predators	Cats, hawks, owls, fox – anything that kills mice.	Hawks, owls, cats; also other carnivores. Humans (trappers and cars).	Hawks, owls, cats, foxes. Humans (trappers and cars).
Misc Notes	<ul style="list-style-type: none"> - Smallest living carnivore; does not appear to be common in any part of its range. Considered a “species of concern” in MN. - May have at most a few black hairs on the extreme tip of tail. - So. ranges may have delayed or incomplete molt. - Can run very fast, up to 6 mph. - After four weeks of age becomes more difficult to handle (once eyes open). - European LW 2-2.5x larger than American LW - <i>BW can fluctuate 5-10 g/day depending on timing and amount of last meal.</i> - At 4 weeks ♂ gradually gain weight faster than ♀ & by 6 wks. 2x size of ♀; @ 8 wks. ♀ have a growth spurt. - Juveniles unable to kill prior to 38-42 days old.⁴ - High mortality in first year; #1: predators, #2: starvation. - frozen prey is carried into fur-lined den to thaw, and fresh killed brought in to prevent freezing. 	<ul style="list-style-type: none"> - Often called ermine (white phase) or stoat (brown phase). - May release strong musk when alarmed, enraged, or excited by mating urge. - Defensive behavior includes loud screeching and holding their ground or charging adversary. - <i>>4 ½ weeks mother would no longer retrieve if out of the nest.⁴</i> - Did not play outside the nest until > 7 wks. - STW has the greatest size variation between subspecies of the three weasels (location matters!). Smallest subspecies are found in the northwest mountain ranges; smallest females in WA, smallest males (m. erminea muricus) in CA, CO, ID, MT - Seems to have a fatal fascination for attacking spinning wheels (car tires); perhaps the motion triggers a prey response. - Hunts under the snow in winter. - Dens in ground burrows, under stumps, and in and under rock piles and old buildings release. May have large range of sizes within a single litter 	<ul style="list-style-type: none"> - Color change seems to be triggered by length of daylight but is also genetic. A northern weasel captured and taken south turned white during winter while a southern weasel taken north stayed brown. - May release powerful malodorous musk when alarmed, enraged, or excited by mating urge. - Immobilization using IM injection (25G x 16mm needle) of ketamine HCl (25 mg/kg) + xylazine HCl (2 mg/kg), as recommended for ferrets. - ear tags used for tracking study were size 1 Monel tag, National Band and Tag Company, Newport, KY - Winter white weasel of either sex is sexually inactive. - May be referred to as ermine in the white phase - distance traveled: (♂): 3-4 mi, \bar{x}=2mi Tracking studies of 11 ♂ and 10 ♀: ♂, \bar{x} = 704 ft (60-2535 ft) ♀, \bar{x} = 346 ft (20-1420 ft) - those in open timber traveled much greater distances than those in brushland and dense stands of trees.

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Misc Notes (cont.)	- skulls in midwest frequently showed signs of nematode (roundworm) infestation in lesions of frontal sinuses ³	- Dens in ground burrows, under stumps, and in and under rock piles and old buildings - I had three male short tailed weasels (mane as infants, tail ~50% body length, no chest markings) that were 250-300g at release. Littermates were much smaller.	- Prey: ♂ - small mammals up to rabbit size; ♀ - mice and chipmunks. Rabbits are pursued and nipped, with bites both weakening the animal and allowing a blood trail which facilitates tracking. Known to hunt in preferred coverts but rarely the same one on consecutive nights

Weasels have the reputation of being objectionable, bloodthirsty, wandering demons of carnage. Instead, weasel behavior should be interpreted as a highly specialized and adapted carnivorous way of life that is a result of a long and successful evolutionary process. Weasels are not angry, cunning, or wanton killers. Instead, they are efficient predators with behavioral, anatomical, physiological, and sensory adaptations that allow them to survive as small carnivores. Their quick actions and curious nature are tools with which to hunt and find small and agile prey. These same features may also help avoid being taken as prey. Their fearless and pugnacious nature is necessary to allow the weasel to attack, capture, and kill prey that may be much larger. The “wanton slaughter” of prey is an efficient way of exploiting a locally abundant food source that is easily captures. Once prey are killed, some are eaten immediately and the rest cached for future use.

Gerald E Svendsen⁶

Cited references:

¹National Audubon Society Field Guide to Mammals, 1996 rev

²Mustelid (Mustelidae) Care Manual, Association of Zoos and Aquariums, July 2008, revised January 2010

³American Weasels, E. Raymond Hall, August 2015 (written over the past 25 yrs.)

⁴“The Least Weasel *Mustela nivalis* Linnaeus, Developmental Biology in Comparison with Other North American *Mustela*,” Biological Series Volume 4, Number 7, Publications of the Museum, Michigan State University, Gary A Heidt, April 1970

⁵East and Lockie, Edinburgh

⁶Wild Mammals of North America, edited by George A. Feldhamer, Bruce C. Thompson, Joseph A. Chapman, 2nd edition, 2003

Additional Resources:

Professional Standards

- AVMA Guidelines for Euthanasia of Animals

- NWRA Wildlife Formulary

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Additional Resources (continued):

- NWRA/IWRC Standards for Wildlife Rehabilitation
- NWRA Principals of Wildlife Rehabilitation
- NWRA Wildlife Rehabilitators Code of Ethics (https://www.nwrawildlife.org/page/Code_of_Ethics_Rehab)
- GFAS Standards For Caniform Sanctuaries, 2019 or most recent version. <https://sanctuaryfederation.org/wp-content/uploads/2020/02/Caniform-Standards-2019.pdf>
- One Health Initiative, <https://onehealthinitiative.com/>
- AZA Mustelid (Mustelidae) Care Manual
- Carpenters Exotic Animal Formulary

Academic texts and supplemental reading:

- The Least Weasel *Mustela nivalis* Linnaeus, Developmental Biology in Comparison with Other North American *Mustela*,” Biological Series Volume 4, Number 7, Publications of the Museum, Michigan State University, Gary A Heidt, April 1970
- The Natural History of Weasels and Stoats, Carolyn M. King and Roger A. Powell, 2nd edition, 2007
- Wild Mammals of North America, edited by George A. Feldhamer, Bruce C. Thompson, Joseph A. Chapman, 2nd edition, 2003
- Walker’s Mammals of the World, Volume 1. Donald M. Nowak, 6th edition, 1999
- Winter World, Bernd Heinrich, 2003 – and really, anything by Bernd Heinrich is worth reading