HORNED LARK - EREMOPHILA ALPESTRIS

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Alaudidae Genus: Eremophila Species: E. alpestris

Habitat:

Biomes: Horned Larks favor bare, dry ground and areas of short, sparse vegetation; they avoid places where grasses grow more than a couple of inches high. Common habitats include prairies, deserts, tundra, beaches, dunes, and heavily grazed pastures. Horned Larks also frequent areas cleared by humans, such as plowed fields and mowed expanses around airstrips. In wintertime, flocks of Horned Larks, often mixing with other birds of open ground, can be seen along roadsides, in feedlots, and on fields spread with waste grain and manure. At high altitudes and latitudes, Horned Larks forage on snowfields in the late afternoon, though they mostly feed in areas free of snow.

Distribution:

In US: The horned lark breeds across much of North America from the high Arctic south to the Isthmus of Tehuantepec, northernmost Europe and Asia and in the mountains of south-east Europe. There is also an isolated population on a plateau in Colombia. It is mainly resident in the south of its range, but northern populations of this passerine bird are migratory, moving further south in winter.

In Other Countries: Europe, Asia, [CHECK DISTRIBUTION MAPS]

Holistic Description: Look carefully at a bare, brown field, especially in winter, and you may be surprised to see it crawling with little brown shapes. When they turn, you may see a neat yellow face, black mask, and tiny black “horns” waving in the breeze. Horned Larks are widespread songbirds of fields, deserts, and tundra, where they forage for seeds and insects, and sing a high, tinkling song. Though they are still common, they have undergone a sharp decline in the last half-century.

Species Richness: 42 SUBSPECIES

Population Dynamic: In the open areas of western North America, horned larks are among the bird species most often killed by wind turbines. In 2013, the U.S. Fish and Wildlife Service listed the subspecies streaked horned lark as threatened under the Endangered Species Act.

Evolution and Systematics:

Evolution: Numerous late Pleistocene (North American Land Mammal Age <400,000 years before present) localities across North America and Europe.

Systematics: Species varies in body size, especially wing chord and mass, and in coloration, which are bases for distinguishing subspecies.

Number of Species: 42 SUBSPECIES

Number of Genera: 42 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 6.3-7.9 in (16-20 cm) Weight: 1.0-1.7 oz (28-48 g)

Wingspan: 11.8-13.4 in (30-34 cm)

Coloration: Male Horned Larks are sandy to rusty brown above, with a black chest band, a curving black mask, and head stripes that extend to the back of the head (sometimes raised into tiny “horns”). The face and throat are either yellow or white (see Regional Differences). The underparts are white. Females have similar head and breast patterns but are less crisply defined.

General Body Features: Horned Larks are small, long-bodied songbirds that usually adopt a horizontal posture. They have short, thin bills, short necks, and rounded heads—the shape sometimes broken by two small “horns” of feathers sticking up toward the back of the head.

Special Features of the Body: Behavioural mechanisms that permit a desert existence include nomadism, enabling them to move away from low resource patches to more productive patches, and the ability to use features of their environment to escape from high temperatures.

Special Features of the Head and Sensory Organs: Desert birds can prevent overheating by using rodent burrows and other shelters during the heat of the day. Birds in deserts include a high proportion of ants in their diet, a resource not often exploited by birds of more temperate environments, and they also show seasonal or opportunistic shifts in their diet, feeding on seeds when available, and on more succulent green plant matter, such as leaf bases of grasses, after rain.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: LOOK AROUND, KIND OF RANDOMLY ORGANIZED, OOPS.

Any Special Internal Anatomy: Horned Larks have a low standard metabolic rate (2.28 cc O2/g/hr) and a high thermoneutral zone (ca. 35øC), both of which indicate the larks are well adapted to a warm, open environment. At night the larks have a 2.0

ø to 2.5øC drop in body temperature, their metabolic rate is reduced, thermoneutrality is extended to near 20øC, and their evaporative water loss is about half the daytime level. All these energy and water saving mechanisms are beneficial to a diurnal bird that does not eat or drink at night. AND The water requirements of Horned Larks are not exceptionally low for small birds, and the larks must rely on a versatile behavioral repertoire for survival under stressful conditions. The temperature regulation at high ambient temperatures of desert larks is superior to that of larks from a more mesic environment, and is probably a physiological correlate of behavioral differences. The apparent reliance on behavioral, rather than on physiological adaptations is probably a reflection of the recent dispersal of the larks onto the desert

Sexual Dimorphisms: Small, ground-dwelling oscine with “horns”—occipital feather tufts—which can be raised or lowered but are usually erect in males. Males slightly larger and darker than females

Differences Between Juvenile Stage and Adult: Dorsal surfaces of Juvenile plumage vary from light gray, almost white (E. a. utahensis) to almost black (E. a. praticola), with a light neutral gray triangular tip on each feather (most conspicuous on the darker plumages). Breast, lores, and occipital feather tufts dusky brown. Outer rectrices white on lateral webs and pointed instead of rounded as in adults. Bill of young buff yellow darkening to dark neutral gray with age. Leg and foot color flesh in young birds, darkening to light neutral gray in older juveniles.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Horned Larks forage in pairs or small groups during breeding season, but form large nomadic flocks in winter—often mixing with other bird species, including Tree Sparrows, Dark-eyed Juncos, Lapland Longspurs, and Snow Buntings. Horned Larks walk or run over open ground as they search for seeds and insects. Males often sing in flight, probably as part of courtship or territorial defense. During the breeding season, males defend turf against intruding males, and females occasionally repel intruding females. Fighting pairs fly at each other, rising up to 50 feet straight up into the air, pecking and clawing. On the ground, battling males strike at each other with extended wings. As ground nesters, Horned Larks and their eggs and young are vulnerable to predation by birds and by mammals—including meadow voles, shrews, deer mice, weasels, skunks, and raccoons. A nesting female conceals her location by leaving the nest stealthily and flying silently near the ground; she is reluctant to return while potential predators lurk nearby. If repeatedly flushed from her nest, she performs a distraction display, fluttering up and landing about a foot from the nest in a crouched posture with her wings spread, sometimes uttering soft distress calls. If she is followed, she walks rapidly away from the nest before flying. On hot days, foraging individuals follow the shade of tall objects such as power poles and fence posts; females stand over the nest with wings held away from their bodies to shade eggs and chicks from the sun.

Locomotion: Adults walk, fledglings hop after leaving the nest until about day 27. Flight somewhat undulating; wings beat 3-4 times, then folded against body for the time of 1-2 beats. Steady, more even flight during "casual abandonment" of a nest or song flight.

Communication and Perception: Horned Larks sing a delicate, musical song particularly in the early morning as early as an hour and a half before sunrise. It’s a fast, high-pitched sequence of sharp, tinkling notes, often rising in pitch to a quick jumble of concluding notes. Songs are typically a couple of seconds long but may go on for more than a minute. Males usually sing from a post, rock, clod, mound or other perch, but may sing on the wing, from a height of up to about 800 feet in the air.

Home Range: Uniformly dispersed during the breeding season by territoriality. Territories are "all purpose," used for courtship, nesting, and feeding. Late in the breeding season, neutral areas may also be used for feeding. Territory size is influenced by habitat and population densities; ranges from 0.6 to 3.1 ha (mean = 1.6 ha) in agricultural lands of the Midwest. Intensity of territoriality is greatest early in the breeding season and becomes low by midseason. Replacement of a male by a new male causes an increase in territorial fighting for 1-2 wk.

Degree of Sociality: During the breeding season, mated pair remains with young within the territory. Young from first nests begin forming flocks by mid- to late May in the Midwest and by mid-Aug in alpine and subarctic habitats, while their parents are caring for second nest.

Level of Aggression: Most fights are in the air; individuals (usually males against males) fly at each other, then rise straight up for 10-15 m, pecking and clawing. On the ground, males strike at each other by extending their wings. Fights may last a few seconds to >1 min. At its conclusion, 1 male may fly away or both may land and repeat the fight. After the dispute is settled, 1 or both birds may land on a song perch and give a ground song.

Migration: Resident to short-distance migrant. Populations breeding in northern North America move south into Lower 48 for winter; other populations are resident year-round. Migrates by day in flocks, foraging on the move. Alpine-breeding populations move to surrounding lowlands in winter.

Predators:

Predators: Falcons, Shrikes, Weasels, Skunks, Ground Squirrels, Skunks, Raccoons, House Cats, Meadow Voles, Shrews, Deer Mice, American Crows, Western Meadowlarks.
Anti-Predator Defenses: Usually leaves nest stealthily and avoids revealing its location. Females show 2 types of nest-protective behavior. In "casual abandonment", female flies directly from the nest silently and near the ground, while the intruder is up to 100 m away. In the distraction display, a female repeatedly flushed from her nest flutters up and lands 30 cm from the nest in a crouched posture with her wings spread; may utter soft distress calls. If followed, female walks rapidly from the nest before flying.

Diet and Nutrition:
Adult Diet: Horned Larks eat seeds and insects. They feed their nestlings mostly insects, which provide the protein the young birds need to grow. Insect prey are mainly grasshoppers, beetles, and caterpillars. Chicks may also be fed invertebrates such as sowbugs and earthworms. Horned Larks glean most of their food from the ground, but they sometimes perch on plants to harvest seeds from seed heads. In agricultural fields they may pluck and eat sprouting lettuce, wheat, and other crop seedlings.
Juvenile Diet: ^^^^^
Special Adaptations for Getting Prey: Looks for food as it walks. Although usually moving while feeding, may remain in 1 spot for up to 5 min. During the breeding season, paired males and females often feed together. Known to dig up larvae and worms with beak, and to pry cutworms out of weed clumps or the base of corn plants. Adults apparently skilled at chasing and catching small insects they flush. Sometimes give up the chase after running a few steps, but may pursue an insect 2–3 m. Most plant food is gleaned from the ground as the birds forage.

Reproduction:
Mode of Reproduction: Monogamous
Mating System: Apparently monogamous for at least a breeding season, but no long-term studies of pair bonds. Will change mates during the breeding season if mate dies or disappears.
Mating Season: January to end of June
Courtship: Male courtship display begins with male drooping wings and spreading tail; body held almost horizontal. Male makes chittering sounds with bill open and struts in front of female, vibrating his wings and spreading his black chest patch. Display lasts a few seconds to 1 min. Female displays to male when she is ready to mate, not necessarily after a courtship display
Territoriality: HOME RANGE
Mating: She crouches with body horizontal, droops wings slightly, and vibrates her tail side to side. Male mounts for a few seconds. In one case, male gave a courtship display after mating but was ignored by female. Similarity of female's invitatory display to dust-bathing can prompt males to attempt to mate with dust-bathing females. Courtship feeding observed once: male presented female with insect food, mounted her momentarily, dismounted and walked around briefly, then remounted before giving food to female.
Nest Placement: The female Horned Lark selects a nest site on bare ground, apparently with no help from her mate. She either chooses a natural depression in which to build the nest or excavates the site herself, a process that can take a couple of days. To dig a cavity, she uses her bill to loosen soil and flip it aside, sometimes also kicking dirt out with her feet.
Nest Description: The Horned Lark’s nest is a basket woven of fine grass or other plant materials and lined with finer material. Two to four days after preparing the site, she begins weaving her nest from grass, small roots, shredded cornstalks, and other plant material, then lines it with down, fur, feathers, fine rootlets, even lint and string. The nest cavity diameter is about 3–4 inches; the inside nest diameter is about 2.5 inches and its depth about 1.5 inches.
Egg-Laying: Clutch Size: 2-5 eggs Number of Broods: 1-3 broods Egg Length: 0.7-1.0 in (1.8-2.6 cm) Egg Width: 0.5-0.8 in (1.3-1.9 cm) Incubation Period: 11-12 days Nestling Period: 8-10 days Egg Description: Dark pearl gray to pale gray spotted with cinnamon brown or brownish-olive.
Hatching and Incubation/Gestation: Helpless, covered in buffy down.
Development: At hatching, young are covered with a cream-buff down that serves as protection against the weather and aids in concealment. ALTRICIAL
Parental Care: After hatching, one female spent an average of 50% of her time on the nest, compared to 64% before hatching. Nestlings fed within 1–2 h after hatching. In most cases, both parents feed the young, although females have reared broods alone. Feeding parent usually lands 20 m away, then works its way to the nest, quickly feeds the young, and continues to walk 4–5 m more before flying.
Lifespan: Usually around 1-5 years.

Conservation:

Official Federal Status: Least Concern
Special Statuses in Individual States: NONE
Threats: Horned Larks are numerous but their populations declined by over 2% per year between 1966 and 2015, resulting in a cumulative decline of 71%, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 120 million, with 62% spending some part of the year in the U.S., 17% in Canada, and 9% wintering in Mexico. The species rates a 9 out of 20 on the Continental Concern Score. Horned Lark is not on the 2016 State of North America's Birds' Watch List, but the 2014 State of the Birds Report listed it as a Common Bird in Steep Decline. Loss of agricultural fields to reforestation and development, and human encroachment on the birds' habitat, are factors in their decline—but the overall declining trend is not fully understood.
Conservation Efforts: ^^^^^^^^
Extra Facts:

1. Horned Larks inhabit an extensive elevation range, from sea level to an altitude of 13,000 feet. Linnaeus named this bird Alauda alpestris: "lark of the mountains" (it has since been moved to the genus Eremophila).
2. Female Horned Larks often collect "pavings"—pebbles, clods, corncobs, dung—which they place beside their nests, covering soil excavated from the nest cavity. The "paved" area resembles a sort of walkway, though the birds don't seem to use it that way. While nobody fully understands the function of these pavings, they may help prevent collected nesting material from blowing away while the nest is under construction.
3. When she is ready to mate, a female Horned Lark performs a courting display that looks very much as if she is taking a dust bath. In fact, potential mates seem prone to confusion on this score: a male catching a glimpse of a dust-bathing female may attempt to mate with her.
4. The longest-lived Horned Lark on record in North America was a male, and at least 7 years, 11 months old when he was recaptured and rereleased during banding operations in Colorado in 1983, the same state where he had been banded.

Notable Species:

1. Pallid horned lark (E. a. arcticola) – (Oberholser, 1902): Found from northern Alaska to British Columbia (western Canada)
2. Hoyt's horned lark (E. a. hoyti) – (Bishop, 1896): Found in northern Canada
3. Northern American horned lark (E. a. alpestris) – (Linnaeus, 1758): Found in eastern Canada
4. Dusky horned lark (E. a. merrilli) – (Dwight, 1890): Found on western coast of Canada and USA
5. Streaked horned lark (E. a. strigata) – (Henshaw, 1884): Found on coastal southern British Columbia (western Canada) to coastal Oregon (western USA)
6. St. Helens horned lark (E. a. alpina) – (Jewett, 1943): Found on mountains of western Washington (north-western USA)
7. Oregon horned lark (E. a. lamprochroma) – (Oberholser, 1932): Found on inland mountains of western USA
8. Desert horned lark (E. a. leucolaema) – Coues, 1874: Also known as the pallid horned lark. Found from southern Alberta (south-western Canada) through north-central and central USA
9. Saskatchewan horned lark (E. a. enthymia) – (Oberholser, 1902): Found from south-central Canada to Oklahoma and Texas (central USA)
10. Prairie horned lark (E. a. praticola) – (Henshaw, 1884): Found in south-eastern Canada, north-eastern and east-central USA
11. Sierra horned lark (E. a. sierrae) – (Oberholser, 1920): Also known as the Sierra Nevada horned lark. Found on mountains of north-eastern California (western USA)
12. Ruddy horned lark (E. a. rubea) – (Henshaw, 1884): Found in central California (western USA)
13. Utah horned lark (E. a. utahensis) – (Behle, 1938): Found on mountains of west-central USA
14. Island horned lark (E. a. insularis) – (Dwight, 1890): Found on islands off southern California (western USA)
15. California horned lark (E. a. actia) – (Oberholser, 1902): Found on coastal mountains of southern California (western USA) and northern Baja California (north-western Mexico)
16. Mohave horned lark (E. a. ammophila) – (Oberholser, 1902): Found in deserts of south-eastern California and south-western Nevada (south-western USA)
17. Sonora horned lark (E. a. leucansiptila) – (Oberholser, 1902): Found in deserts of southern Nevada, western Arizona (south-western USA) and north-western Mexico
18. Montezuma horned lark (E. a. occidentalis) – (McCall, 1851): Originally described as a separate species. Found in northern Arizona to central New Mexico (south-western USA)

19. Scorched horned lark (E. a. adusta) – (Dwight, 1890): Found in southern Arizona and southern New Mexico (south-western USA), possibly north-central Mexico
20. Magdalena horned lark (E. a. enertera) – (Oberholser, 1907): Found in central Baja California (north-western Mexico)
21. Texas horned lark (E. a. giraudi) – (Henshaw, 1884): Found in coastal south-central USA and north-eastern Mexico