

Nature's Signs of an Approaching Storm

Whether you're hiking, hunting, trapping, camping, or preparing to survive and adapt in the wilderness far from civilization, the wilderness demands respect and preparation. The forces of nature can strike unexpectedly, and survival often hinges on our ability to anticipate, adapt, and act. This introduction serves as a reminder of the essential items we need in our backpack to navigate the challenges nature may throw our way.

In the Appalachian Mountains, unpredictable weather can shift quickly from calm to alarming. These experiences are not just about survival—they are about understanding nature's rhythms and leveraging tools, knowledge, and skills to adapt relatively easily. This includes applying the **Ten-Survival Categories (10-SCs)** that I have shared in previous articles.

Let me share some lessons from my time outdoors and how you can confidently prepare for changing weather. Many of my experiences come from when modern portable weather devices, GPS systems, cell phones, or satellite phones were widely available. I want to offer this perspective to help you navigate the wilderness if you ever find yourself without technology, relying instead on nature itself for guidance.

WARNING: *Whenever you head into the wilderness, ensure you have at least minimal coverage of the 10-SCs. For multi-day trips, a more complete accounting of the 10-SCs is essential. Weather is a major factor in wilderness survival—prepare accordingly and hike aware and ready to adapt to the unexpected.*

Terry's 10-Survival Categories (10-SCs)

<p>1. Compass <small>(Navigation Methods)</small></p> <p>2. Containers <small>(Water, Food)</small></p> <p>3. Combustion <small>(Fire, Light)</small></p> <p>4. Cover <small>(Shelter, Sleep Structure, Sleep System, Clothing)</small></p> <p>5. Calories <small>(Food Types)</small></p>	<p>6. Cutting <small>(Knife, Axe, Saw)</small></p> <p>7. Cordage <small>(Rope Types, Knots)</small></p> <p>8. Communications <small>(Radio, Phone, Relationships)</small></p> <p>9. Care <small>(First-Aid, Hygiene, Tools)</small></p> <p>10. Combat <small>(Insects, Animals, People)</small></p>
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A Comprehensive Framework

Animals and Birds: Nature's Living Barometers

Humans, like the animals and birds of the wilderness, respond to changes in atmospheric pressure—though often less instinctively. As the barometer drops before a storm, you may notice subtle physical sensations such as a slight pressure in your ears, a heaviness in the air, or even a shift in your energy levels. While less refined than wildlife, these natural responses are your body's way of sensing environmental changes. Learning to recognize these cues and observing the behaviors of animals and birds in the wilderness can provide invaluable warnings about approaching storms.



By tuning into these signals and understanding how wildlife reacts—such as birds flying lower, songbirds falling silent, or deer retreating to dense cover—you can deepen your connection to the natural world and stay prepared for sudden weather changes. Let us explore how these living barometers operate and what they can teach us about survival and adaptation in forested mountain environments like the Appalachians.

Birds Behavioral Shifts

In the Appalachian Mountains, birds show noticeable behavioral shifts before storms. These changes, driven by falling atmospheric pressure provide clear signals of what is to come if we know what to look for:

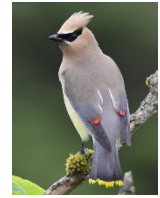
Eastern Phoebes

Eastern phoebes are insectivorous birds that typically forage at mid-level heights, flying 10 to 30 feet above the ground near water sources or open areas. Before a storm, falling barometric pressure drives insects lower, and phoebes follow them, often hovering just above streams or foraging along the ground. Their behavior becomes more focused and frantic as they attempt to gather enough food to sustain themselves through the storm when hunting opportunities may be limited.



Cedar Waxwings

Cedar waxwings, often seen near the treetops, alter their feeding behavior when falling barometric pressure signals an approaching storm. This shift, driven by prey forced lower to the ground by denser air, is a reliable indicator of incoming harsh weather.



Blue Jays

Blue jays are known for their adaptability and sharp communication. Before a storm, they exhibit distinct behaviors such as foraging closer to the forest floor and increasing vocalizations within their flock. These behaviors are primarily driven by a need for quick food access and preparation for shelter during impending harsh weather.



Crows

Crows are highly social birds that display noticeable changes in behavior as storms approach. They focus on ground scavenging and increase their loud cawing to alert others. While these actions can also reflect general food-gathering strategies, combining such behavior with falling atmospheric pressure is a reliable storm indicator.



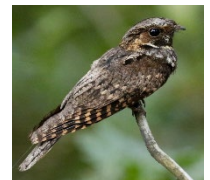
Wood Thrushes

Wood thrushes, typically forage close to the forest floor, exhibit a distinct change in behavior before storms. They become more active and venture into more open spaces, such as forest edges or near water, to take advantage of insects driven down by the falling pressure. This temporary shift in behavior allows them to maximize food intake before sheltering in dense underbrush during the storm.



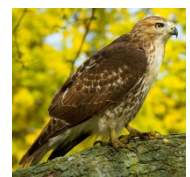
Whippoorwills

Whippoorwills, nocturnal birds known for their twilight calls, may become more vocal as atmospheric pressure drops before storms. This behavior reflects their instinct to maximize hunting opportunities and find shelter in anticipation of adverse weather.



Red-Tailed Hawks

Red-tailed hawks are usually seen soaring high, but they will perch lower before storms to avoid turbulence caused by shifting winds. This behavior, often observed alongside signs of dropping pressure and incoming clouds, is a useful indicator of approaching severe weather.



Great Horned Owls

Primarily nocturnal hunters, great horned owls adjust their activity patterns when storms approach. Prey, like mice and rabbits, become more active before harsh weather, prompting the owls to begin hunting earlier in the evening. Their distinctive hoots may increase as they secure territory and warn off competitors.



Barred Owl

Barred owls, like their great-horned relatives, adapt their behavior as storms approach. Their deep, resonant hoots often become more frequent, signaling a heightened effort to establish territory and secure hunting opportunities. These nocturnal hunters may also adjust their activity patterns to target prey that becomes more active before adverse weather. The increased vocalizations of a barred owl, particularly in the evening, paired with shifting winds, are a reliable sign of impending storms.



American Robin

American robins often exhibit noticeable changes in behavior before storms. As atmospheric pressure drops, these birds forage more actively on the ground, capitalizing on earthworms and insects brought to the surface by the changing conditions. While this behavior ensures they secure enough food before adverse weather, it also reliably indicates an approaching storm. Observing their sudden ground-level activity combined with darkening skies can help wilderness travelers anticipate the need for shelter.



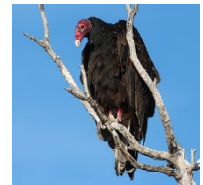
Wild Turkey

As the weather deteriorates, wild turkeys may alter their roosting habits. Typically roosting high in trees, they often seek more sheltered, lower roosts to shield themselves from strong winds and driving rain. Their movement toward lower ground or dense vegetation provides natural windbreaks and safety during the storm. Observing a sudden shift in turkey behavior, such as increased foraging or movement to sheltered areas, can be a reliable indicator of an approaching storm in the wilderness.



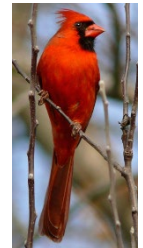
Turkey Vulture

Turkey vultures, typically seen soaring high above open landscapes, change their habits as storms approach. Sensitive to shifts in air currents, these birds stop soaring and perch low on tree branches to avoid turbulence. This grounded behavior, combined with the visual cues of an incoming storm, is a clear signal to prepare for severe weather. Their low perching conserves energy and ensures their safety during the storm.



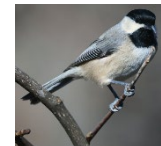
Northern Cardinal

Northern cardinals, known for their vibrant plumage and melodious calls, exhibit a distinct shift in behavior before storms. As atmospheric pressure drops, they retreat into thick vegetation, reducing vocalizations and activity. Their silence and preference for dense cover reflect a survival strategy to conserve energy and minimize exposure to turbulent weather. Spotting a cardinal darting into areas of heavy brush or noticing an absence of their usual calls is a subtle but effective indicator of incoming rain or wind.



The Silence of Songbirds

Songbirds, such as chickadees and warblers, often grow silent before storms, reflecting a survival strategy to conserve energy and avoid exposure to turbulent conditions. This marked quietness, particularly during falling barometric pressure, contrasts with their usual lively behavior and serves as a strong indicator of impending harsh weather.



Carnivores and Herbivores: Nature's Ground-Based Barometers

Just as birds offer aerial signs of changing weather, ground-dwelling animals like carnivores and herbivores respond to atmospheric pressure in ways that can alert you to approaching storms. These behaviors are deeply instinctive, ensuring their survival in the wilderness. Understanding how different animals—whether meat-eating carnivores or plant-eating herbivores—their reactions to weather changes can provide valuable insights to help you prepare.



Carnivores: Foxes, Coyotes, and Raccoons

Carnivorous animals are highly adaptable and often adjust their behavior to secure food or shelter ahead of a storm. These creatures are attuned to environmental shifts, including changes in barometric pressure, wind direction, and humidity.

Foxes

Foxes, particularly red foxes, are known for their wide range of vocalizations, which serve as a form of communication within their territories and social structures. These vocalizations can change in frequency and intensity in response to environmental factors, including weather shifts. Observing and interpreting these sounds can provide valuable clues about approaching storms or atmospheric changes:



Why Foxes Vocalize Before Weather Changes

As barometric pressure drops, prey species such as mice, rabbits, and insects become more active, and foxes seize this opportunity to hunt. Their vocalizations—such as sharp barks or eerie screams—may increase during this time as they signal territory or coordinate with family groups. This heightened activity is how they make the most of the time before the storm limits their hunting opportunities.

Warning Calls

Foxes are highly territorial and use vocalizations to establish boundaries or warn off intruders. Before a storm, you may hear an uptick in these warning calls as the fox seeks to secure its hunting ground and nearby shelter for the approaching weather. You can better understand the natural indicators of weather changes by paying attention to fox vocalizations—sharp barks, eerie screams, or repeated yips. These calls, driven by survival instincts, serve as communication within their species and a subtle warning for the observant traveler.

Coyotes

Like foxes, coyotes exhibit heightened foraging behavior before a storm. They tend to hunt closer to their dens, using the time to consume enough energy to weather the storm safely. Their vocalizations may also increase during this period as they communicate with their pack about the changing conditions.



Coyote Vocalizations and Weather Changes

Coyotes are highly social and vocal animals known for their distinctive howls, yips, and barks. Their vocalizations are vital in territory marking, social bonding, and communication within their packs. These calls can also change due to environmental factors, including weather shifts. Observing coyote vocalizations and behavior in the wilderness can offer subtle yet valuable insights into approaching storms or atmospheric changes.

Interpreting Coyote Vocalizations

Coyotes' vocal patterns before weather changes can signal the following:

Increased howls and yips: Pack communication and regrouping before the storm.

Short, sharp barks: Territorial reinforcement and alerting others to incoming changes.

Coordinated vocalizations: Indicating group hunting efforts as prey becomes more active ahead of harsh weather.

Raccoon Vocalizations and Weather Changes

Though primarily nocturnal and solitary foragers, raccoons are highly vocal animals capable of producing a wide range of sounds. From growls and hisses to purring and chittering, their vocalizations communicate territorial warnings, stress, and social interactions. Like foxes and coyotes, raccoons' vocal patterns and behaviors may shift in response to weather changes, offering subtle clues about incoming storms. Raccoons vocalize before the weather changes for the following reasons:



Increased Foraging Urgency

Raccoons are opportunistic feeders; they often exhibit more vocal foraging behaviors before a storm. Growls, purrs, and chittering sounds may accompany their frantic search for food as they attempt to stock

up before rain or wind disrupts their usual activities. This pre-storm urgency reflects their instinct to maximize feeding opportunities while conditions are favorable.

Shelter Communication

Before a storm, raccoons often retreat to dens, hollow trees, or other protected areas. During this process, vocalizations such as chittering or trilling may increase as they communicate with their young or other raccoons about needing shelter. These sounds are particularly common among mothers guiding young to safety.

Interpreting Raccoon Vocalizations

Raccoons' vocal patterns before storms can indicate the following:

Purring or chittering: Communication during frantic foraging or guiding their young to shelter before a storm. These sounds often accompany their increased urgency as they prepare for worsening conditions.

Sharp barks or trills: Stress-related vocalizations when seeking shelter or reacting to environmental changes, especially as the storm approaches.

Observing raccoons' behaviors and listening to their vocalizations can gain insights into changing weather conditions. Their increased urgency and distinct sounds reflect their survival instincts, offering natural cues to wilderness travelers. Whether foraging aggressively or guiding their young to safety, raccoons serve as ground-based barometers, providing timely warnings of what is to come.

Herbivores: Deer, Rabbits, and Squirrels

Herbivorous animals, relying on plants as their primary food source, exhibit distinctive behaviors before the weather changes. These behaviors are driven by their survival instincts, helping them secure food or seek shelter as conditions shift. Observing their patterns, especially in the forested Appalachian wilderness, can offer reliable signs of approaching storms.

Deer

Deer are particularly sensitive to atmospheric changes, using their heightened senses to detect incoming weather shifts:

Heightened Alertness and Movement: Before a storm, deer often leave open meadows earlier than usual and retreat to dense forest cover. This behavior minimizes their exposure to wind and rain while also reducing the risk of predation, as predators may also become more active during pre-storm conditions.



Feeding in Groups:

Deer may display an increased tendency to feed in groups before a storm. This behavior allows them to maximize their foraging time while remaining alert to potential threats.

Rabbits

Rabbits, such as Eastern cottontails, show subtle but noticeable changes in behavior as storms approach:

Decreased Activity: Unlike other herbivores, rabbits tend to reduce their activity and remain close to their burrows or dense underbrush as pressure drops. This behavior conserves their energy and protects them from predators during turbulent weather.

Rapid Feeding Bursts: Before storms, rabbits may briefly increase their feeding activity, grazing quickly to prepare for the time they will spend sheltering in their burrows.



Squirrels

Squirrels are highly active foragers, and their behavior becomes even more noticeable before a storm:



Frantic Gathering: Squirrels often exhibit frantic foraging behaviors, gathering nuts, seeds, or other food items at an accelerated pace. You may see them darting across the forest floor or climbing trees to store food in their caches before sheltering.

Increased Vocalizations: Squirrels may become more vocal when interacting with others or warn of environmental changes. Chattering and tail flicking are common signals that they know the shifting conditions.

Interpreting Herbivore Behaviors

The behaviors of herbivores before storms provide critical insights into changing weather conditions:

Deer: Early retreat to dense cover and group feeding reflect their awareness of approaching harsh weather.

Rabbits: Reduced activity and bursts of rapid feeding show their instinct to conserve energy and remain safe.

Squirrels: Frantic foraging and vocalizations highlight their preparation and sheltering instincts.

Observing these patterns allows wilderness travelers to anticipate storms better and adapt their plans accordingly. Herbivores act as ground-based barometers, offering subtle yet reliable signs of nature's rhythms and the weather's impending changes.

Insects and Frogs: Subtle Signs

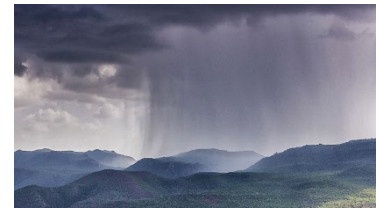
Even the smallest creatures offer insights into changing weather:

Frogs and Crickets: On humid Appalachian evenings, frogs and crickets create a chorus that often creates crescendos before storms. However, their sudden silence signals the storm's immediate arrival.

Ants: Ants often will increase their activity to seal their mounds before rain.

Watching Weather from Mountain Ridges

One of the Appalachian terrain's greatest wonders offered to the wilderness traveler is the chance to watch weather systems in motion. Standing on a ridge, you can see rain sweeping across the valleys like a solid grey hanging sheet, driven by wind currents rippling through the trees below.



The Language of Thunder and Lightning

Thunder and lightning are not only dramatic elements of storms but also practical tools for estimating a storm's distance: Light travels much faster than sound, so you see the lightning flash almost instantly, but the thunder takes longer to reach your ears. To estimate how far away the storm is, count the seconds between the first lightning flash and the sound of thunder. Then, divide that number by five to get the distance in miles. For example, if you count 10 seconds, the storm is about 2 miles away. This simple method can help you gauge whether the storm is approaching or moving away when the second flash of lightning and thunder occurs based on the difference between the first and the second.



What Clouds Tell Us with Their Indicators

When an incoming storm is on its way, the clouds seem to grow restless, thickening and darkening as they gather their strength. Towering cumulonimbus clouds, their tops flattening out into an anvil shape, dominate the horizon, their gray bellies churning with energy. What I notice is that the lower clouds scudding across the sky, moving faster than before, driven by a rising wind that brushes my face and stirs the treetops. The air feels charged, almost electric, as if the atmosphere itself knows something big is about to unfold. These clouds whisper urgency, their message clear: brace yourself, for the storm is near.



Summary: The Wilderness as a Barometer – Watch, Listen, and Look

The wilderness offers a wealth of natural indicators that reveal impending weather changes, and attuning to these signs enhances both survival and connection to nature. Across the Appalachian wilderness, animals, birds, and even insects exhibit instinctual behaviors in response to shifts in atmospheric conditions. Thunder and lightning and the clouds also have stories to tell. Together, these natural signals serve as reliable barometers, guiding wilderness travelers to anticipate storms and prepare accordingly. Birds are some of the most apparent weather indicators because of their observable foraging patterns and activity levels. High-flying species like red-tailed hawks and turkey vultures adjust their habits by perching lower and finding substance earlier as storms approach. Meanwhile, low-flying birds such as Eastern phoebes and cedar waxwings adapt their feeding heights, reflecting shifts in prey behavior caused by falling pressure. The silence of songbirds like chickadees and warblers, often preceding a storm, underscores nature's silent warning system.



Ground-dwelling carnivores and herbivores contribute additional signs. Carnivores such as foxes, coyotes, and raccoons exhibit increased foraging urgency and vocal activity, signaling the need to secure food and shelter. Herbivores like deer, rabbits, and squirrels seek dense cover or rapidly gather resources. These actions, although subtle, reflect the instinctual responses of wildlife to atmospheric shifts.

Even smaller creatures, such as frogs, crickets, and ants, provide clues. Frogs and crickets often grow silent just before rain arrives, while ants seal their mounds in preparation for downpours. With its ridges and valleys, the Appalachian terrain enhances the ability to observe incoming weather systems, offering a panoramic perspective on nature's signals.

Through keen observation of these behaviors and patterns, wilderness travelers gain valuable time to adapt. One can confidently align with nature's rhythms and navigate challenges by securing shelters, preparing gear, or relocating to safer areas. The wilderness, alive with its interconnected systems, speaks clearly to those who watch, listen, and look.

Conclusion: Finding Your Rhythm with Nature

Every moment in the wilderness is a lesson in resilience and adaptability. By observing nature's signs—low-flying birds, shifting winds, the forest's silence, and reading the sky—you can prepare for whatever lies ahead. Combined with the 10-SCs, having skills with each of the 10-Survival Categories will keep you safe and confident in the Appalachian wilderness and beyond. Let nature guide you, respect its rhythms, and you will find not just survival but a profound connection to the world around you.



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www.PrepareSurviveAdapt.com