The identity, well-being, and economy of Aspen are inextricably linked to the land and ecosystems that hold it. Development arrived in the Roaring Fork Valley during the mining age, and has since ebbed and flowed with tourism, residential, and commercial expansion. Consistently, Aspen’s economy has relied on its natural surroundings and simultaneously posed a threat to that same lifeblood.

Today, Aspen is surrounded National Forest, Wilderness areas, and numerous networks of public lands and trails. Visitors and locals alike benefit from the protection of these unique natural spaces. Undeveloped land in the Aspen area is both essential to the human experience, as well as to the vital ecosystems and ecosystem linkages for wildlife and vegetation.

**Figure 1.** The Marolt Open Space (left). ¹ Trees lining Galena St in downtown Aspen (right).²

In addition to the preservation of wilderness and forest in the areas surrounding Aspen, careful attention is dedicated to open spaces, parks, and trails in and around the town. This elevates the health of the urban environment, its scenic character, and livability. These urban spaces also provide a level of accessibility and ease of access that is challenging to achieve in the wilderness areas and public lands

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¹Williamson, City of Aspen Parks, Trails, and Open Space Department.
²Armstrong, Laura. 2016.
further afield. The 2012 Aspen Area Community Plan (AACP) underscores that the natural environment is an essential component of the quality of life enjoyed in this mountain town. The plan further asserts that: “scenic views of the natural environment, easy access to public lands and a range of recreational opportunities are among our greatest assets and the reasons many people choose to visit or make the Aspen Area their home.”

To understand Aspen’s progress in striving toward greater sustainability, local experts and stakeholders convened and chose the three following metrics to represent the Sustainability Report’s Parks, Trails, and Open Space section:

- Acres of Parks, Trails, and Open Space
- Community Forest Coverage
- Forest Health Index

The metrics listed above are presented in the respective “Sustainability Measures” section of this report.

**Acres of Parks, Trails, and Open Space**

The community greatly benefits from parks, trails, and open space for their preservation of natural habitat and as areas for outdoor recreation. Concentrating recreation near population centers benefits wilderness and wildlife to the extent that habitat fragmentation is prevented.

There are 30 parks in Aspen. These parks contain playing fields and skate parks, water features and storm water filtration, picnic tables and restroom facilities, and natural settings to host events. A wide network of trails, both paved and unpaved, weave in and around town. Many of these trails are also maintained for cross country skiing in the winter. The City of Aspen owns a variety of open space parcels in and outside of City Limits and collaborates with Pitkin County in co-ownership and maintenance of other open spaces in the Upper Roaring Fork Valley. These jurisdictions work together to manage these spaces with conservation, wildlife, and human well-being in mind. For example, seasonal closures protect migration corridors and elk calving habitat.

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4Ibid., p. 44.
5Ibid. For a list of the many other projects and accomplishments and initiatives that have come to fruition in regards to parks, recreation, open space, and trails since 2000, please visit p. 45 of the 2012 AACP.
6Williamson. City of Aspen Parks, Trails, and Open Space Department.
Since 2000, the City of Aspen has entered into multi-jurisdictional partnerships with Pitkin County to acquire a 250-acre parcel on Smuggler Mountain, and the 845-acre Droste Property at Brush Creek, which combines with Cozy Point Ranch and Aspen Mass open spaces to form a monumental 2,500-acre Sky Mountain Park.7

The City of Aspen Parks, Trails, and Open Space Department works hard to maintain existing holdings and carefully evaluates prospective parcels on a case-by-case basis. The 2012 AACP offers guidance on how these new parcels should be evaluated:

- Future acquisition... should focus on the intrinsic value of open space, wildlife habitat, protection of scenic resources, recreational uses, trail connectivity and accessibility.
- Future trail expansion should connect existing trails to improve and maintain easy access to public lands and provide opportunities for the use of trails by commuters in both summer and winter.9

Community Forest Coverage

Aspen is a “Tree City USA” and is also accredited by the Society of Municipal Arborists, a peer-reviewed program that demonstrates excellence in urban and community forest management.11 Yet, as the historic photos in Figure 5 reveal, not long ago, many of Aspen’s streets were bare of cover or greenery. Now, the community canopy is an essential part of the resident and visitor experience in Aspen, and is also recognized for its healthy environmental impacts. Urban forests absorb water runoff and help filter water and air pollution. They provide shelter from elements, offer relief from heat, and stabilize soil erosion. Altogether, they enhance aesthetic value and support well-being.

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7 Ibid., p. 45. For a list of the many other projects and accomplishments and initiatives that have come to fruition in regards to parks, recreation, open space, and trails since 2000, please visit p. 45 of the 2012 AACP.
8 Kuhn, Matt. City of Aspen Parks, Trails, and Open Space Department.
9 Aspen Area Community Plan. City of Aspen and Pitkin County, 2012, p. 44.
10 Kuhn, Matt. City of Aspen Parks, Trails, and Open Space Department.
As is the nature of living ecosystems, the task of forest management requires careful study, attention, and action. Within the implementation steps outlined in the Wildlife and Wildlife Habitat Section of the AACP is the objective to: "promote the diversity and vitality of the ‘urban forest’ that exists both within the City of Aspen and in the Wildland Urban Interface."

In 2015, the City of Aspen commissioned an Urban Tree Canopy (UTC) Study to document the density of canopy coverage within Aspen’s City Limits. This study used aerial photography as well as Light Detection and Ranging (LiDAR) technology to render precise imagery and information about the City’s community forest, on a parcel-specific level. Results of this study, as well as the important benefits of urban forest, are highlighted in the Community Forest Coverage dashboard.

The two previously discussed measures – Acres of Parks, Trails, Open Space, and Community Forest Coverage – relate to populated areas in or near Aspen. The subsequent measure speaks to the environmental sustainability of the larger ecological communities that surround the urban spaces of the Roaring Fork Valley.

**Forest Health Index**

Aspen is a community surrounded by forests and wilderness. These areas are vibrant ecological communities, important natural buffers, and cherished for recreation and conservation benefits alike. Since 2013, the Aspen Center for Environmental Studies (ACES) has generated an annual Forest Health Index (FHI). This web-based index assembles a variety of factors that influence the health and resiliency of Roaring Fork Valley forests. The index seeks to:

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15 ACES partners with Aspen Global Change Institute on data analysis and to ensure the scientific accuracy of the database.
1. Provide clear communication about conditions of local forest ecosystems undergoing visible states of change.
2. Facilitate discussion and planning about forest management, restoration, and conservation at a landscape scale.
3. Fill gaps in baseline data and methodology for tracking change in forest conditions at ecosystem scales over time.
4. Present a model for other management communities to adopt as an additional resource and for comparative evaluation.\(^\text{16}\)

The FHI’s notion of forest health is based on the premise that a healthy forest is one that is resilient to change and able to provide for local ecology as well as human goals.

<table>
<thead>
<tr>
<th>FHI SCORE</th>
<th>FOREST SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>81-100</td>
<td>Within range of natural variability; exhibiting normal composition, structure, and function</td>
</tr>
<tr>
<td>61-80</td>
<td>Departing from natural ranges of variability; trends suggest regular composition, structure, and function</td>
</tr>
<tr>
<td>1-60</td>
<td>Significant departure from natural range of variability or normal levels; trends suggest highly abnormal characteristics in composition, structure, and function</td>
</tr>
</tbody>
</table>

Figure 6. Forest Health Index scores and score explanations.\(^\text{17}\)

The FHI total score, as well as scores for the individual measures of which it is comprised, indicate how well aligned each item is to its own range of natural variability.\(^\text{18}\) Scores are calculated by comparing the current state of each indicator to a historic, average, or target state. In this sense, the FHI measures forest change, and many indicators are closely tied to climate change. Aspen’s Sustainability Report sets a target that the overall FHI score will remain in the range of natural variability, between 81-100 points (see figure 6).

In addition to highlighting the Index’s total score, the accompanying dashboard tracks the progress of four specific measures: Frost Free Days, Insect & Disease Infestation, Elk Population Health, and Colorado River Climate District Precipitation. These indicators were chosen as examples for Aspen’s Sustainability Report because they speak to the dynamic range of matters that impact forest health and can also experience significant short-term and long-term changes, thereby exerting strong influence on the overall index score. Some of the indicators are drivers of forest health, such as precipitation levels and frost free days. Others are highly dependent upon forest health, but do not have large effect over that health, such as elk population health. Finally, insect and disease infestation is both an influencer of and influenced by the condition of local forests.


\(^{17}\) Ibid.

\(^{18}\) Ibid.
Local communities can influence some of these markers of forest health. Regardless of their influence, all stakeholders should understand the impacts of a changing forest to plan for a resilient future.

Below is a list of current actions and proposed actions that positively impact these measures and the sustainability of the Aspen’s community’s parks, trails, and open space. Subsequently, a recommendation is also put forth for further action.

**Current Actions**
- The **Smuggler Mountain Open Space 10-Year Management Plan** outlines steps to restore tree age class diversity by mimicking natural disturbance events. This will concurrently improve wildlife habitat, reduce fire risk, and conserve the unique natural features of Smuggler Mountain. In 2017, this will focus on oak and mountain shrub habitat improvement and fuels reduction.
- Forest health is promoted through the **collaboration with local, state, and national jurisdictions to manage local and regional forests** in a way that promotes species and age class diversity and promotes healthy fire rotation. The **Hunter Creek prescribed burn** in May of 2016 is a good example of such partnerships.
- A formal **Tree Risk Management Plan** and Policy was created in 2017.
- A complete **GIS inventory of Aspen’s community forest** is being finalized. Gaining this data is a tremendous asset for management and analysis.
- The **City of Aspen Forest Management Plan** will be updated in 2018 using results of the 2017 GIS inventory.