SUMMARY ACTION MINUTES

(Action Items Displayed in Italics)

THURSDAY, JANUARY 8, 2026 — 6:00 p.m.

I. ROLL CALL

Chair Jones, Alternative Chair Warren and Members Browning, Webber, Schoeck (arrived during Item V.A), and Stout were present. Member Ball was absent.

II. PRESENTATION(S) (ITEM(S) A)

A. DAVID SHAWVER CERTIFICATE OF RECOGNITION AND GRATITUDE

Chair Jones announced the new officer roles for the Orange County Parks Commission and the Subcommittee, welcomed Commissioner John Warren as the new Alternate Chair of the Subcommittee, and presented former Chair David Shawver with a certificate of recognition for his service.

III. PUBLIC PARTICIPATION

At this time, members of the public may address the Subcommittee on items of public interest that are within the jurisdiction of the Subcommittee and are not contained in tonight's agenda.

Jim Foley, Orange County Mountain Biking Facebook Group, expressed interest in OC Parks evaluating potential authorization of select unauthorized trails and consider new trails in response to increased park use.

IV. CONSENT CALENDAR (ITEM A)

The following item will be approved by one motion unless a Subcommittee Member requests to pull a specific item.

A. APPROVE SUBCOMMITTEE MINUTES FOR THE OCTOBER 9, 2025 MEETING

Motion: Member Webber
2nd: Member Browning
Approved 4–0 (Member Schoeck was absent for this vote)

V. DISCUSSION CALENDAR MATTERS (ITEMS A–B)

A. OVERVIEW OF FORTHCOMING OC PARKS UNAUTHORIZED TRAIL DECOMMISSIONING GUIDELINES

Staff will present an overview of the forthcoming best practices document for decommissioning unauthorized trails within OC Parks facilities.

Antonio Valdes, OC Parks Trails and Mapping Administrator, presented the item and answered the Members' questions.

Jennifer Naegele, OC Parks Natural Resources and Trails Manager, answered the Members' questions.

James Dinwiddie, OC Parks Deputy Director, answered the Members' questions.

Mike Wilson, OC Parks Deputy Director, answered the Members' questions.

RECOMMENDED ACTION:

Provide feedback on the draft overview of Unauthorized Trail Decommissioning Guidelines for OC Parks' consideration.

Motion: Member Schoeck
2nd: Member Webber
Approved 5–0

B. 2025 TRAIL PROJECTS OVERVIEW PRESENTATION

Staff will present a summary of the major trail projects completed over the past year.

Antonio Valdes, OC Parks Trails and Mapping Administrator, presented the item and answered the Members' questions.

Jeaniene Casiello, Executive Officer, answered the Members' questions.

Jennifer Naegele, OC Parks Natural Resources and Trails Manager, answered the Members' questions.

James Dinwiddie, OC Parks Deputy Director, answered the Members' questions.

Mike Wilson, OC Parks Deputy Director, answered the Members' questions.

RECOMMENDED ACTIONS:

Receive and file.

Motion: Alternate Chair Warren
2nd: Member Browning
Approved 5–0

VI. SUBCOMMITTEE EXECUTIVE OFFICER'S REPORT

A. DEPARTMENT UPDATES

Jeaniene Casiello, Executive Officer, provided updates.

VII. SUBCOMMITTEE MEMBER COMMENTS AND REPORT

At this time, Subcommittee Members may comment on agenda or non-agenda matters, provided that no action may be taken on off-agenda items unless authorized by law.

VIII. ADJOURNMENT: *7:06 p.m.*

Unauthorized Trail Decommissioning Guidelines

Contents

Purpose and Scope

These guidelines provide a framework for managing unauthorized trails within OC Parks. Because environmental conditions, operational priorities, staffing levels, and available resources vary across parks and over time, staff may adapt the approaches described in this document as necessary to achieve resource protection, visitor safety, and compliance with applicable laws, conservation plans, and park management objectives. The procedures, thresholds, and timelines described herein are intended as general guidance rather than mandatory requirements, and professional judgment may be applied where circumstances warrant.

Unauthorized trails refer to any man-made route, trail, or road within parkland that is not recognized by a park's guiding documents or that is identified through adaptive management as incompatible with park management goals. These routes are often user-created, though some may predate the establishment of the park. If left unaddressed, unauthorized trails can fragment habitat, contribute to runoff and erosion, promote the spread of invasive species, and damage sensitive cultural resources, among other impacts.

Managing unauthorized trails typically involves a multi-stage process that begins with identification and reporting, followed by evaluation, prioritization, and, where appropriate, closure or restoration. Consistent identification and reporting practices help ensure that unauthorized routes are documented, evaluated, and addressed in a coordinated manner.

For the purposes of this document, "trail decommissioning" refers to the process of closing and restoring unauthorized routes to eliminate ongoing use and reduce impacts to natural and cultural resources. Decommissioning actions may range from passive measures such as signage or access management to more active restoration treatments such as soil stabilization, revegetation, or habitat restoration.

1. Identification and Reporting

Identification and reporting represent the first operational step in the management of unauthorized trails. Once a potential unauthorized route is observed, staff determine whether it warrants formal tracking and documentation.

Routes that meet the tracking thresholds are entered into the OC Parks Unauthorized Trail GIS Database to support standardized evaluation and follow-through.

Minor deviations, such as small spurs, short connectors, or limited trail braiding, may be technically unauthorized but are typically addressed through routine trail maintenance and

park operations when they do not meet tracking thresholds. Tracking every minor variation is generally not operationally efficient and may provide limited management value.

Unauthorized trails are typically identified in two primary ways: digital observations and field observations.

Digital observations involve reviewing drone imagery, satellite imagery, or fitness-application heatmaps to detect new or previously unreported routes. These discoveries may be incidental, as staff often encounter indicators of unauthorized routes while using these platforms for other work-related purposes.

Field observations come from park staff as well as volunteers and partners, who encounter these routes while working or recreating within OC Parks' backcountry.

Once identified, the observation is reported via email to the Trails and Mapping Administrator, Supervising Park Ranger, Operations Manager, and Parks Division Manager. This notification serves as the official handoff from observation to tracking.

From this point, the Trails and Mapping Administrator may initiate baseline data collection, which includes verifying the route, organizing documentation, and, when applicable, creating or updating the OC Parks Unauthorized Trail GIS Database record.

Regardless of the source, standardized identification and reporting procedures support consistent data management and help ensure that relevant staff are informed of new unauthorized impacts.

1.1. Definition and Scope of Unauthorized Trails

This section clarifies what constitutes an unauthorized trail and provides guidelines for when an observed route should be treated as an unauthorized trail for identification, reporting, and inclusion in the OC Parks Unauthorized Trail GIS Database.

An unauthorized trail is a man-made route that shows evidence of recurring travel and is not recognized by the park's guiding documents or is identified through adaptive management as incompatible with park management goals.

While this definition is broad, the OC Parks Unauthorized Trail GIS Database and the standardized workflow described in these guidelines generally apply only to routes that meet certain practical tracking thresholds. These thresholds are intended to support operational efficiency and consistency; staff may exercise professional judgment when evaluating whether a route should be formally tracked. Routes that do not meet these thresholds are typically addressed through routine park operations and authorized trail maintenance practices rather than the creation of a database record.

To support consistent tracking, the following route types should be treated explicitly:

- Long man-made routes traversing wildlands that are not authorized.
- Unauthorized reroutes, shortcuts, and alternative lines diverging from an authorized trail that extend beyond 200 linear feet from the authorized trail.
- Spurs, such as trail off-shoots leading to viewpoints, facilities, water, or other attractions, that extend beyond 200 linear feet from the authorized trail.
- Formerly authorized alignments that are no longer compatible with current management goals should be tracked as unauthorized trails for workflow purposes.
- Legacy routes (routes that predate park establishment) should be treated as unauthorized trails if they are not included in a park's guiding documents or do not have a history of regular documentation in official park publications.
- Unauthorized bike parks, large practice jumps, and obstacle circuits.

Figure 1: Improvised bike features on parkland, such as those shown here, are considered unauthorized trails under these Guidelines.

The following conditions are not covered by this document and generally do not warrant the creation of an unauthorized trail record:

- Trail braiding, which consists of multiple weaving lines within the same general footprint, is managed by authorized trail maintenance and restoration, and is not entered as an unauthorized trail record unless a braid diverges from the parent authorized trail by more than 200 feet and rejoins the main tread after a length of at

least 500 linear feet. If it meets those criteria, it should be treated as an unauthorized reroute and tracked accordingly.

- Shortcuts that are less than 200 feet in length.
- Spurs that are less than 200 feet in length.
- User-created paths in turf and developed areas.
- Not all ground disturbance warrants the creation of an unauthorized trail record. Examples include ephemeral or isolated impacts that do not form a continuous route (e.g., disturbance from improper material staging or a shortcut corner without a formed tread).
- Animal trails and other non-human-created areas of exposed soil.

Figure 2: Shortcuts less than 200 feet in length, such as the one shown here, are not considered unauthorized trails under these Guidelines.

1.1.1. Impacts of Unauthorized Trails

While unauthorized trails can appear to provide additional connectivity and experiences, these unauthorized trails can create substantial negative impacts, including habitat degradation, soil loss, visitor safety risks, impacts to cultural and paleontological resources, and increased management complexity.

Common Progression of Unauthorized Trail Development

Unauthorized trail impacts often develop through a predictable sequence:

1. Vegetation is removed, either intentionally or unintentionally through repeated use;
2. Soil is loosened and displaced;
3. Runoff begins to concentrate on the new tread;
4. Rain events deepen rutting and incision over time;
5. Users shift to the tread margins to avoid ruts, damaging adjacent vegetation and widening the tread.

This process can become a feedback loop of continued widening, sometimes resulting in routes that rival the width of two-lane roads. In other cases, instead of widening, users continue traveling within the incised center tread. Over time, the tread can subside below the surrounding terrain, forming a narrow trench with steep sidewalls.

Figure 3: Trail widening. This trail was originally approximately 3 feet wide. As incision developed, trail users began avoiding the eroded tread, trampling adjacent vegetation and progressively widening the disturbed corridor.

1.1.2. Habitat and Biological Resources

Unauthorized trails can degrade biological resources through multiple pathways.

Unauthorized trail creation removes vegetation from the outset. As later incision and deterioration occur, widening and braiding often expand the disturbed footprint, increasing vegetation loss and stressing adjacent plants through root disturbance and repeated trampling.

Unauthorized trails can also facilitate the spread of invasive species. Trail users may unknowingly transport seeds on their gear, boots, and tires. This risk is heightened because invasive plants often thrive in disturbed soils such as tread margins.

Unauthorized trails can contribute to habitat fragmentation by subdividing larger habitat areas into smaller, more disconnected patches. Some wildlife species avoid human activity and maintain distance from trails and frequent use areas. As new routes are cut through wildlands, human-averse species may be squeezed into smaller habitat patches, increasing stress.

1.1.3. Soil Loss and Sediment Delivery

Eroded soil is transported downslope in runoff, where it can enter drainages and, in some cases, creeks and other water bodies. Suspended sediment increases turbidity and can reduce light penetration, affecting aquatic plants and algae and stressing aquatic organisms. While a single small source may have limited effects, the cumulative sediment input from multiple routes can be significant.

1.1.4. Visitor Safety

Unauthorized trails are prone to severe erosion and ruts that can pose safety risks, especially on steep grades. In addition, they frequently feature constructed features such as jumps, or other obstacles that are intended to be challenging but often constitute significant risk.

Because unauthorized trails are not part of the official trail system and do not have standardized naming or wayfinding, emergency response can be delayed when injured users cannot clearly describe their location. In addition, some of these trails exit abruptly onto popular authorized routes, increasing the potential for collisions.

1.1.5. Cultural and Paleontological Resources

Unauthorized trails occasionally cross areas of cultural or paleontological significance. Unauthorized trail construction and maintenance can involve substantial soil movement and excavation.

In one instance, OC Parks staff identified a bicycle jump constructed with several hundred non-biodegradable sandbags. Installation required excavation of a trench approximately 2.5 feet deep and roughly 30 feet long. Such disturbance can damage cultural resources and paleontological deposits.

Many sites within OC Parks remain important to Indigenous communities, including the Tongva and the Acjachemen, and may also hold significant historical and archaeological value.

Figure 4: This trench, which reached a depth of 2.5 feet, is an example of destructive trail construction that can permanently damage sensitive cultural and paleontological resources.

1.1.6. Management Challenges

A substantial unauthorized trail network increases operational complexity beyond the impacts described above. It can complicate enforcement (e.g., after-hours use or motorized use on difficult-to-access routes), increase visitor wayfinding confusion, and in some cases create complications where routes connect to or spill onto neighboring properties.

1.2. Identification Methods

Timely identification is key to the management of unauthorized trails. Early detection reduces the chance that a route receives regular user and increases the likelihood of successful closure.

Unauthorized trails may be identified either in the field or through digital review.

1.2.1. Field Observations

Field identification may result from intentional inspection for unauthorized trails but is often incidental. Park staff spend significant time in backcountry areas, and during these visits may notice new alignments on nearby slopes, evidence of recent construction, or unusual man-made structures. Field observations are also frequently reported by the public, volunteers, and partner organizations.

Common Field Indicators Include:

- Routes branching from existing trails without signage
- Ribbons of bare soil visible on nearby hills
- Non-natural or constructed features visible from a distance

Figure 5: Ribbons of bare soil running downslope, as shown here, may indicate an unauthorized trail. Trail splitting and braiding, also visible in this example, are additional indicators that are uncommon on authorized trails.

1.2.2. Digital Observations

Digital identification is increasingly common. Staff may review satellite imagery or other aerial resources as part of routine work, which can reveal previously unknown routes. Fitness application heatmaps such as Strava may sometimes indicate routes that do not

correspond to authorized trails. In some cases, drone imagery may reveal additional branches or connecting routes.

Common indicators include:

- Visible trails that are unnamed on common web maps
- Routes not shown on official maps or publications
- Heatmap routes that do not correspond to authorized trails

1.3. Reporting Protocol

Once identified, unauthorized trails should be reported in a consistent manner, so that appropriate staff are notified quickly and follow-up actions can be initiated. Reporting should occur as soon as practical after identification, ideally within the same work week.

If an unauthorized trail appears to involve active construction, rapid expansion, or an immediate safety or natural resource concern, the observation should be escalated promptly in accordance with park operations protocols.

Reports should be sent via email to the Trails and Mapping Administrator, with the Supervising Park Ranger, Operations Manager, and Parks Division Manager included on the same message.

The report should include sufficient information to locate the route and understand what was observed:

Field Observation

- Location (GPS point or coordinates if available)
- Photos of the trail entry and visible impacts or structures
- Brief description (e.g., connects from/to; apparent use type if evident)
- Any immediate concerns such as safety hazards and sensitive resources

Digital Observation

- Shareable link and/or coordinates
- Imagery showing the route
- Date of imagery
- Screenshot of the heatmap route (if applicable)

Email subject lines should follow a consistent format:

Unauthorized Trail Report – [4-letter park abbreviation] – [Nearest authorized trail/landmark] – [Date]

Example:
Unauthorized Trail Report – WHRA – Line Shack and Serrano Trails – 04/22/2025

Upon receipt, the Trails and Mapping Administrator should acknowledge the report or request clarifying information as needed. Acknowledgement should occur within two (2) business days for standard reports, and as soon as practicable for fast-track notifications. This acknowledgement represents the official handoff from observation to tracking and initiates the transition to Baseline Data Collection.

Fast-track situations: If an unauthorized trail appears to be actively under construction, rapidly expanding, or presents an urgent safety or natural resource concern, do not delay reporting to assemble a complete documentation package. Notify the Trails and Mapping Administrator, the Supervising Park Ranger, and the Operations Manager as soon as practicable. The situation may be designated for immediate priority response, with follow-up documentation (photos, coordinates, links) provided as it becomes available.

Figure 6: Tools cached along a trail may indicate that unauthorized trail construction is in progress.

1.4. Data Management and Storage

This section describes how unauthorized trail observations and supporting materials are retained and organized at the time of identification. The detailed process for database integration and structure is addressed in Section 2.

The initial report email thread should be retained and remain searchable, including any follow-up messages, clarifications, and additional photos. These records should be

maintained by the Trails and Mapping Administrator, with relevant materials also saved to the designated OC Parks shared storage location.

Supporting materials (photos, location information, links, and brief notes) should also be saved to the designated OC Parks shared storage location using the standardized folder structure. This ensures that documentation remains accessible and can be readily referenced during Baseline Data Collection.

Once the report and supporting materials are captured, organized, and stored, the unauthorized trail proceeds to Baseline Data Collection, where the route is verified and fully integrated into the OC Parks Unauthorized Trail GIS Database.

2. Baseline Data Collection

Baseline Data Collection is the process of documenting unauthorized trail attributes prior to implementing closures. This information expands the OC Parks Unauthorized Trail GIS Database, supports comparison across unauthorized trails, and helps determine which closures should occur first (addressed in Section 3). It also provides the baseline against which closure effectiveness will later be evaluated.

Once an unauthorized trail is reported, the Trails and Mapping Administrator typically initiates baseline data collection, which may include a drone flight, desktop research, and an in-person assessment. These methods capture key information such as trail length, impacts to sensitive habitat, tread condition, potential hazards, and approximate trail age. Standardized survey procedures help ensure that collected data remains consistent and comparable across parks and over time. The resulting information then informs the next phase: decommissioning prioritization and approval.

This step is essential because each unauthorized trail has distinct impacts influenced by factors such as ecosystem type, grade, use intensity, and hydrologic setting. Baseline data provides a clear understanding of the unauthorized trail inventory and helps identify which routes may warrant attention first, safety considerations, resource concerns, and operational priorities.

2.1. Purpose and Role of Baseline Data Collection

Baseline data collection provides OC Parks staff with a snapshot of an unauthorized trail's condition at the time of discovery or, for legacy trails, at the time of cataloging. It documents key characteristics such as trail length, indicators of user motivation and use patterns, and features that drive concern (e.g., resource impacts, hazards, or factors

affecting closure feasibility). By identifying the primary issues associated with a trail, baseline data supports prioritization by helping determine which unauthorized trails should be addressed first.

For unauthorized trails that are not immediately closed, baseline data provides a point of reference for future comparison. This allows staff to assess whether conditions have degraded over time and whether prioritization should be reconsidered. Once closures occur, baseline data also supports evaluation by allowing staff to compare pre-closure conditions with post-closure outcomes and assess the effectiveness of closure methods.

Baseline data collection additionally supports high-level feasibility and planning. For example, it can inform the expected intensity of closure efforts: a heavily used trail may require more robust closure measures than a lightly used trail. It also helps identify basic feasibility constraints. For example, a route that includes a clear choke point is generally more feasible to close than one that traverses open terrain conditions where users might easily bypass closures. Baseline observations may also flag constraints such as sensitive species known or likely to occur in the area.

2.2. Triggers for Baseline Data Collection

Baseline data collection is initiated when OC Parks needs a standardized record of an unauthorized trail to support decision-making and future evaluation. Common triggers include:

- Newly discovered unauthorized trails
- Cataloging existing unauthorized trails into the database
- Renewed interest in closing an unauthorized trail where baseline data is outdated
- Substantial observed change such as rapid widening, new connectors or spurs, or major disturbance such as wildfire
- Recurring closure failures
- Safety issues, including reports of serious hazards, accidents, or near-misses

2.3. Desktop Baseline Review: Historical Imagery and Activity Heatmaps

The first type of baseline information can be collected from a desktop review using historical imagery and activity heatmaps. Once an unauthorized trail has been reported, the Trails and Mapping Administrator should determine when the trail first appears in available aerial or satellite imagery.

For older trails, the County of Orange historical aerial imagery viewer (OC Archives) can provide imagery dating back to the early to mid-20th century. For trails created within

roughly the past several decades, Google Earth's Historical Imagery is often effective. These sources overlap in some time periods; when they do, reviewing both can help confirm the earliest documented appearance. The earliest documented date (year, or month/year when available), along with the imagery source, should be recorded for inclusion in the OC Parks Unauthorized Trail GIS Database.

The Trails and Mapping Administrator should also review the most recent satellite imagery to support planning for the subsequent drone flight and on-site survey. Desktop review can help estimate the apparent extent of the trail system, identify potential access points, and anticipate spurs or connector trails so they can be accounted for during fieldwork.

Where appropriate, fitness-app activity heatmaps may also be reviewed to develop a general estimate of use intensity. Use should be recorded qualitatively as low, medium, or high and retained for inclusion in the OC Parks Unauthorized Trail GIS Database. Heatmap information should be treated as approximate: users may intentionally disable tracking to avoid detection, which can make a trail appear less used than it is.

Figure 7: Strava heatmap routes showing, from left to right, low-, medium-, and high-intensity trail use. Low-intensity use appears as several distinct parallel lines. Medium-intensity use appears as a solid purple line with a darker center and lighter edges. High-intensity use appears as a thicker, darker purple line with a lighter halo, indicating more concentrated use.

2.4. Drone Imagery Acquisition and Standards

Drone imagery is used to document the unauthorized trail footprint and context, including extent, braiding, disturbed width, and connectivity.

Drone imagery should be collected within one month of a trail's discovery, and as soon as practicable for trails suspected to be high impact. This is especially important where recent satellite imagery is unavailable or insufficient to document the trail shortly after discovery.

Drone imagery is also critical shortly prior to closure, generally within one month of the start of physical work, particularly when more than six months have elapsed since the

most recent aerial documentation. Pre-closure imagery provides an accurate "pre-treatment" baseline for evaluating closure effectiveness, even where other imagery exists.

Imagery should clearly document the full alignment, including start and end points, the main corridor, and any branches or spurs. Sufficient surrounding context should be captured to identify less-obvious connections and to show nearby features such as authorized trails or roads. If the trail system is too large to capture in a single flight, multiple passes may be necessary.

Imagery should be collected in a consistent manner so it remains comparable across sites. Resolution should be sufficient to delineate the route and disturbed footprint, and photographs should be usable (e.g., not overexposed or excessively high-contrast).

Flights may be conducted by an OC Parks-authorized drone pilot, including the Trails and Mapping Administrator. A visual observer should be present during flights, and all applicable FAA requirements must be followed. Park leadership should be notified in advance, and permissions should be obtained when flights may involve other jurisdictions.

Deliverables include georeferenced imagery and mapped trail footprints suitable for inclusion in the OC Parks Unauthorized Trail GIS Database.

2.5. Field Assessment Procedures

An on-foot survey should be conducted once it has been determined that baseline data should be collected. For newly discovered trails, surveys should be completed within one month of the initial report. For trails suspected to be high impact, the survey should be conducted as soon as practicable.

The survey entails walking the entire length of the trail and documenting key attributes. Where feasible, this should occur after drone imagery acquisition so the assessor can confirm whether significant spurs or connector trails branch off the primary alignment in advance of the survey, as these should be surveyed as well. If time does not permit documenting all branches during the initial field visit, the assessor may return shortly thereafter, ideally within the same month of discovery, to complete documentation.

The survey is completed on the assessor's phone using Survey123, a GIS-based application. The form prompts the assessor with standardized questions, and the assessor should remain alert for attributes described in Section 2.6. Of particular importance is photographing locations where the unauthorized trail intersects with authorized spaces (e.g., trail entries and exits), as these locations are typically monitored later.

The trail should be walked by a park staff to build familiarity with impacts within their jurisdiction and, when available, by the Trails and Mapping Administrator. The survey may be completed and submitted by either party.

2.6. Standard Data Elements to be Collected

Standardized data allows OC Parks to consistently track and monitor unauthorized trails across parks and over time. It also creates a dataset that can inform prioritization by focusing on (1) the likelihood of closure success, (2) public safety risk, and (3) biological/cultural sensitivity. This information is submitted to the OC Parks Unauthorized Trail GIS Database.

This baseline field assessment is not expected to serve as biological or archaeological/paleontological pre-construction surveys. Specialists may be engaged when warranted, for example, if the assessor observes indicators of a sensitive resource concern requiring timely review.

The Survey123 form contains the full set of prompts. Examples of data elements include:

- Trail geometry
- GPS line/track (including estimated length)
- Branches/spurs/connectors present
- Use and physical condition
- Apparent use intensity
- Tread condition
- Signs of upkeep/maintenance
- Indicators related to likelihood of closure success
- Presence of choke points
- Surrounding vegetation height and density
- Alternate routes nearby or bypass potential
- Public safety and hazards
- Blind corners and T-intersections with authorized trails
- Built features (jumps, drops, makeshift structures)
- Sensitive species observations
- EDRR invasive species observations
- Indicators of potential cultural resources

Figure 8: Alcoves like this may indicate the presence of rock shelters or other cultural sites. Unauthorized trails can increase access to these areas and may contribute to vandalism or other resource damage.

2.7. Data Management and Integration into the OC Parks Unauthorized Trail Database

This data is only useful if it is findable, comparable, and updateable over time. The OC Parks Unauthorized Trail GIS Database ensures each unauthorized trail is represented by a single, consistent record that can be updated as conditions change.

The OC Parks Unauthorized Trail GIS Database is a GIS-based system in which each unauthorized trail is assigned a Unique Trail ID and is represented by (1) a spatial record (a mapped line showing the alignment) and (2) a tabular record (standardized fields stored with, or directly linked to, that spatial record). Records support attachments and supporting documentation, including field photos and other files or references, associated with that Unique Trail ID.

The database provides both a map view, showing where unauthorized trails are located and how they relate to surrounding conditions, and a table view for filtering, sorting, and querying attributes to support tracking and prioritization. Where point observations are collected during surveys (e.g., erosion hotspots, choke points, sensitivity flags), those points are stored so they remain associated with the parent unauthorized trail record through the Unique Trail ID.

When an unauthorized trail includes multiple distinct alignments (e.g., spurs or branches), each alignment may be mapped as a separate feature, but all features remain linked to the same Unique Trail ID unless they will be managed as separate closure actions.

Workflow

1. Collection: Field observations are captured using a standardized form (Survey123), including photos and spatial information.
2. Quality control: The assessor confirms the submission is complete (required fields, geometry, and required photos/attachments as applicable).
3. Create/Update record: A new unauthorized trail record is created, or an existing record is updated, using the Unique Trail ID.
4. Maintenance over time: Updates are date-stamped and added when conditions change (including pre-closure updates and post-closure effectiveness checks) without overwriting earlier records.

The database is managed by the Trails and Mapping Administrator, with contributions from park staff acting as assessors. OC Parks GIS support assists with system maintenance and refinements as needed

3. Prioritization and Approval

Because staff time and funding are finite, it is necessary to prioritize which unauthorized trails are decommissioned first. Prioritization is possible because each route has unique characteristics that influence its impact on park resources. OC Parks captures these attributes during the on-the-ground and remote assessments conducted in the previous section. Once collected, these data are transferred to the Unauthorized Trail Prioritization Scoring Guide. This fillable spreadsheet assigns numerical values to each trail's traits and generates a final score that places the trail into a low-, medium-, or high-priority category.

High-priority trails represent significant resource or safety risks and are considered feasible to close using available resources. For these trails, a brief report, the Trail Decommissioning Request, is drafted and submitted for internal review. This review process verifies that the Scoring Guide's evaluation aligns with management goals and confirms that sufficient resources are available to perform the decommissioning. After internal approval, the project site is evaluated to ensure the work can be conducted in compliance with all applicable restrictions and regulations.

3.1. Purpose of Prioritization

In certain OC Parks facilities, unauthorized trails are unfortunately common. Under ideal circumstances, addressing all of them would be the goal, however, because resources are finite, they cannot all be addressed simultaneously. This is why a prioritization system is needed. Prioritization also ensures that targeted trails are decommissioned when closure is most likely to be successful and when the trail represents a higher safety risk, resource impact, or other operational concern.

To address this, OC Parks has developed the Unauthorized Trail Prioritization Scoring Guide. Establishing a consistent scoring guide improves objective decision-making consistency. In addition, it provides a clear rationale of why a specific trail was selected for closure.

3.2. Overview of Trail Attributes Used in Prioritization

The trail attributes used in prioritization are outlined below.

3.2.1. Probability of Successful Closure

Not all unauthorized trails are equally feasible to close or to keep closed once decommissioning has occurred.

In some cases, a trail may have a strong and dedicated user base, including individuals or groups that actively maintain the route and construct features. This presents both a challenge and an opportunity. On the one hand, dedicated users and builders are more likely to put effort into reestablishing a trail after closure. On the other hand, when a trail's appeal is tied to built features, decommissioning can include dismantling those features, often the most time-intensive and difficult parts to rebuild. This can send a clear message that further construction is not worth the time or risk, especially when paired with consistent monitoring and a rapid response protocol.

Trails that function as important connections between different otherwise disjointed areas of a park may also be more likely to be reopened, as users perceive a need for continued access.

In other cases, feasibility is influenced by physical conditions on and around the trail. For example, trails cutting through open terrain often lack natural choke points, making closure more difficult because obstructions can easily be bypassed.

Conversely, newly created trails are often far more likely to remain closed once addressed. These routes typically do not have regular use, and early intervention sends a clear signal that new trail creation will not be tolerated.

Ultimately, a high likelihood of success is especially important in determining closure priority because failed decommissioning attempts can increase overall resource damage. Users attempting to reopen trails may cut around obstructions, expanding the disturbed area, or move brush or soil onto living vegetation, often killing plants in the process. For this reason, trails that are less likely to close successfully require careful consideration and may require proportionally stronger closure measures to prevent reopening and additional impacts.

3.2.2. Public Safety Risks

Unauthorized trails frequently present elevated safety concerns. These routes may traverse steep slopes, exposed rock faces, or unstable terrain. Trails may haveunsecured rock features, ramps, or gap jumps that increase the risk of serious injury.

Because unauthorized trails are not officially recognized, first responders may also have difficulty locating or accessing injured users during emergencies. Trails presenting significant safety risks are therefore given higher priority for closure.

3.2.3. Neighboring Agency Request

OC Parks makes intentional efforts to maintain strong working relationships with neighboring agencies, landowners, and communities. Because effective decommissioning requires closing the entire length of a trail, when an adjacent land-managing agency, HOA, or property owner expresses interest in closing their portion of an unauthorized trail, OC Parks may consider prioritizing the portion located on park property when feasible.

3.2.4. Cultural and Biological Sensitivity

Impacts to natural and cultural resources are a primary motivation for closing unauthorized trails. As discussed in Section 1, trails impacting intact or sensitive habitats are given greater priority. For example, a trail traversing coastal sage scrub represents impacts to habitat of a high ecological value and may warrant earlier closure.

Location within the broader trail network is also considered. Unauthorized trails in relatively undisturbed portions of a park, especially areas without established trail systems, may be prioritized to prevent the gradual expansion of informal networks in otherwise undisturbed and infrequently monitored areas.

The presence of sensitive or special-status species further elevates priority. Species identified as vulnerable or used as indicators within conservation plans and easements increase the importance of closure, as many are particularly sensitive to human disturbance and may benefit from reduced access.

Cultural and paleontological resources are also incorporated into the criteria. If a trail traverses or threatens important cultural sites or sensitive paleontological areas, this significantly strengthens the justification for closure.

3.2.5. Public Nuisance

Unauthorized trails or unauthorized bike parks that function as unsanctioned gathering areas or sites associated with recurring nuisance activity should be given elevated priority. This may include locations where there is evidence of noise complaints, littering, vandalism, trespass after hours, campfire use, or other forms of incompatible public use.

3.2.6. Overriding Need

While the scoring system is effective in most circumstances, real-world conditions may occasionally elevate the importance of a closure beyond what is captured numerically. For this reason, flexibility is built into the process.

3.3. Using the Unauthorized Trail Prioritization Scoring Guide

The Unauthorized Trail Prioritization Scoring Guide is a fillable spreadsheet in which users assign numerical values to each of the trail's attributes.

Once values are entered, the spreadsheet automatically calculates a cumulative score and designates the trail as low, medium, or high priority for closure. Having this documentation also serves as recorded baseline that can be used for future reevaluations.

Trails that fall into the medium or low priority categories should be placed in a backlog of unauthorized trails to be addressed as resources allow. These trails may also be reassessed over time as conditions change. Scores should be reviewed annually by the Trails and Mapping Administrator in coordination with park supervisory staff, as impacts, use patterns, and management priorities may shift.

Completed Scoring Guides are saved with the Unauthorized Trail GIS Database records and associated project files to maintain a consistent documentation trail.

3.4. Trail Decommissioning Request Form

The Trail Decommissioning Request Form is completed when a trail receives a high priority ranking. The form facilitates review by the Trails and Mapping Administrator, Natural Resources Coordinators, Operations Division, and, when warranted, the Director's Office. This ensures that all relevant parties are aware of the proposed closure and have the opportunity to provide input or suggest revisions.

The form is intended to be a concise document that communicates the primary issues quickly and efficiently. It includes basic information such as the trail's name, known alternative names, park location, primary user group (if known), and estimated year of establishment.

A narrative section summarizes the key justification for closure, expanding on the findings of the Scoring Guide and describing the specific impacts occurring on site and why the trail ranks as a high priority.

The form also includes recommended decommissioning methods. These are not intended to be highly detailed construction plans, but rather a general approach describing anticipated physical closure measures, restoration techniques, monitoring considerations, and whether any public outreach or signage is appropriate.

Attachments should include a basic location map showing the trail within the surrounding park context, along with the completed Unauthorized Trail Prioritization Scoring Guide.

3.5. Internal Review and Approval Process

Initiation of a trail decommissioning request typically occurs when staff identify an unauthorized trail for closure. Park supervisory staff and the Trails and Mapping Administrator are consulted early so they are aware of the issue and can provide input before staff proceed further. The route is then assessed, baseline data are collected, the Unauthorized Trail Prioritization Scoring Guide is completed, and a Trail Decommissioning Request is prepared and submitted to the Trails and Mapping Administrator for review.

If the trail ranks as high priority, the request may be approved to move forward, deferred and placed on hold, or returned for additional information. As the review process continues, each subsequent reviewer also has the opportunity to approve, defer, or return the request.

The next party to receive the request is the appropriate Natural Resources Coordinator, followed by the Operations Division. After the Operation Division's review, if deemed necessary, the project may be forwarded for Director's Office review.

Following approval from Operations (or the Director's Office), the project enters pre-construction review, which typically includes archaeological and paleontological surveys, as well as other applicable compliance requirements such as nesting bird surveys. These surveys identify any site-specific constraints that may influence methods or timing. For example, excavation may be restricted in archaeologically sensitive areas or seasonal limitations may apply due to bird species presence. While it is unlikely for pre-construction surveys to halt a project entirely, it remains possible.

Once internal approval is complete, the project proceeds to Section 4 and Section 5.

4. Evaluation of Resources

The Evaluation of Resources step determines whether a proposed unauthorized trail closure can realistically be executed with the resources currently available to OC Parks. Because decommissioning approaches vary widely depending on trail length, terrain, ecological or cultural sensitivity, and use patterns, this phase begins by confirming the anticipated scope and intensity of the closure. A clearly defined scope allows staff to understand the level of funding, staffing, and technical support required.

This evaluation should occur concurrently with Trail Closure Planning to ensure the resulting strategy aligns with available budget, staff capacity, and contract resources. At minimum, this includes reviewing contract balances, identifying applicable funding sources, and estimating the level of staff oversight the project will require.

Crew or contractor selection is closely tied to resource availability, as each option involves different skillsets, timelines, and supervision demands. Timing is also a critical factor: some closures require immediate action due to safety or resource impacts, while others are more effective when scheduled during seasons that improve efficiency and restoration success.

Together, these considerations clarify whether a closure can proceed immediately, how the strategy should be shaped by current limitations, or whether work should be deferred until conditions are more favorable.

4.1. Assessment of Financial Resources

For a closure to proceed, sufficient funding must be available. Cost estimation generally falls into two approaches: contractor-based estimates and conservation crew-based rough projections. Prior to pursuing either method, the overall closure strategy should be defined at a high level, including intended closure intensity and major components such as tread obliteration, obstruction placement, planting, or restoration. While this does not need to be highly detailed at this stage, it must be clear enough to support realistic cost evaluation.

4.1.1. Contractor-Based Estimates

Contractor estimates require an on-site walkthrough with OC Parks staff. During this visit, staff should communicate:

- Trail use type and popularity
- Desired closure outcomes and intensity

- Proposed methods and obstruction types

The contractor then prepares a scope-based estimate that itemizes tasks, materials, and associated costs. This level of detail helps ensure a shared understanding of the work and reduces the risk of misaligned expectations.

For standing contracts, staff should confirm that sufficient funds remain in the applicable account and that upcoming priority projects will not be compromised. For one-time contracts, staff should verify that appropriate funding sources are available.

4.1.2. Conservation Crew–Based Rough Estimates

OC Parks partners with conservation corps organizations under annual contract funding limits. Because crew size, work pace, and daily schedules vary, not-to-exceed estimates cannot be produced in advance. Final costs are only certain once work is complete.

To determine feasibility, staff should develop rough projections using data from previous decommissioning projects, including:

- Linear feet of trail closed
- Crew hours or days required
- Closure intensity

These historical benchmarks can be scaled to the proposed project length and complexity to approximate cost and duration.

These estimates remain inherently imprecise due to variable crew attendance, terrain difficulty, and occasional non-work days. For this reason, it is strongly recommended to overestimate funding needs, particularly for high-intensity closures. Leaving a closure incomplete makes it highly vulnerable to reopening and often results in greater long-term impacts and wasted resources.

If projects exceed initial timelines, extensions may be requested when funding remains available.

4.2. Assessment of Staff Capacity and Oversight Needs

Each decommissioning project should have a designated OC Parks Project Manager, typically the Trails and Mapping Administrator or an assigned park staff member. This assignment should be based on availability and workload capacity.

Staff oversight requirements vary significantly depending on whether work is performed by a contractor or a conservation crew.

Regardless of who performs the work, periodic site checks are essential to:

- Confirm progress and adherence to scope
- Ensure methods align with OC Parks standards
- Identify emerging issues such as trail user interference or unintended impacts

These visits are most effective while work is ongoing, as post-completion verification is often limited.

Contractor projects typically require less intensive oversight when scopes are clearly defined and expectations are communicated upfront. Periodic check-ins are generally sufficient.

Conservation crew projects require substantially more staff involvement, particularly at project initiation. Even when scopes are communicated in advance with crew coordinators, expectations are not always fully relayed to field supervisors. Initial on-site orientation may require several hours to review techniques, standards, materials, and objectives. Ongoing feedback and adjustments throughout the project are often necessary.

Prior to selecting a conservation crew approach, staff should realistically assess whether adequate time exists to manage and support the project effectively.

4.3. Crew or Contractor Selection Considerations

Beyond funding and staff capacity, the selected crew or contractor should match the technical and environmental demands of the closure.

Key factors include:

- Type of work required (hand labor versus equipment use)
- Sensitivity of surrounding resources
- Complexity and precision of closure methods
- Available staff time for supervision

Contractors vary widely in approach and expertise. Some specialize in rapid, equipment-driven closures, while others focus on detailed, low-impact restoration work. Understanding each contractor's strengths, limitations, and past performance is essential.

In most unauthorized trail contexts, careful and ecologically sensitive methods are preferred over aggressive demolition techniques. However, exceptions exist, such as the removal of large bike jumps or constructed features in heavily disturbed areas, where equipment use may be appropriate.

4.4. Seasonal and Environmental Timing Constraints

Closure effectiveness and efficiency are strongly influenced by seasonal conditions. Whenever feasible, projects should be scheduled to take advantage of environmental conditions that support both construction and restoration outcomes.

Winter (prior to February 15) is generally the preferred period due to:

- Softer, moisture-rich soils that facilitate tread obliteration
- Improved conditions for seeding where applicable
- Higher success rates for cactus and vegetation planting

However, these periods also present challenges, including:

- Limited access immediately following storms
- Nesting bird season (February 15–September 15), which shortens the work window. When possible, decommissionings should be avoided during this period, unless there are overriding circumstances.

Summer and early fall are typically the most difficult periods for decommissioning due to:

- Fire risk associated with powered equipment
- Extreme heat impacts on crews
- Hardened soils that interfere with tread obliteration and can slow the entire project

When evaluating timing, staff should consider urgency of closure, access reliability, restoration needs, and environmental compliance constraints. These factors should guide whether work proceeds immediately or is deferred to a more suitable season.

4.5. Documentation for Future Planning

Upon project completion, staff should record in the OC Parks Unauthorized Trails GIS Database:

- Total project cost
- Crew or contractor hours/days
- Linear feet closed
- Closure intensity level

Maintaining consistent records strengthens future cost estimation, improves planning accuracy, and supports long-term program efficiency.

Once resource feasibility has been confirmed and documentation is complete, the project proceeds to Section 5, where detailed closure strategies and site-specific methods are developed.

5. Trail Closure Planning

Trail Closure Planning is the stage in which staff determine the specific combination of methods and obstructions needed to implement an effective closure. Because no single technique works in all situations, this phase draws from a range of approaches, such as targeting choke points, closing entire routes, reshaping tread, deconstructing built features, brushing-in, and installing difficult-to-remove obstructions such as embedded rocks, logs, wattles, ditches, and strategic plantings.

Before selecting among these options, staff should consider both the trail's physical site conditions and the user behavior driving the route's creation or continued use. Different environments support different tactics, and understanding whether users are motivated by destination, experience, or access helps determine how much deterrence is required and where it should be applied.

Although some strategies can be selected by reviewing baseline assessment data, many closures benefit from a secondary on-site assessment focused specifically on decommissioning tactics. This visit helps staff identify where specific obstructions should be placed, where multiple approaches should overlap, and how closures can be tied into surrounding features to prevent unauthorized rerouting.

The level of detail needed in the final plan depends on the team conducting the closure. Youth corps or entry-level crews typically require thorough, step-by-step guidance, while experienced contractors familiar with best practices may help refine the approach during implementation. Regardless of who performs the work, Trail Closure Planning ensures that physical conditions, user behavior, available methods, and logistical needs are fully considered before crews enter the field.

5.1. User Behavior and Use Patterns

Understanding user motivation is central to designing closures that remain effective over time. Unauthorized trails exist for different purposes, and these patterns strongly influence how likely a route is to be reopened after closure.

Purpose-built mountain biking trails and destination-driven hiking routes typically generate the highest reinvestment from users and are therefore the most prone to reestablishment, particularly when closures are incomplete or low intensity.

For the purposes of these Guidelines:

- Purpose-built trails emphasize the user experience and are intentionally routed across challenging or engaging terrain. These often include constructed features such as berms, jumps, rock structures, or shaped tread designed to enhance flow or difficulty.

- Destination-driven trails exist primarily to reach a specific location such as a water body, viewpoint, geologic feature, or cultural resource. These routes tend to be direct, with few features along the route.
- Connector-style trails, particularly hiking shortcuts, are usually driven by efficiency rather than attachment to the route itself. When alternative access exists, these trails are often more responsive to lighter closure measures.

Many unauthorized trails exhibit hybrid characteristics (for example, a purpose-built trail that also functions as a connector). Where hybrid conditions exist, staff should anticipate higher reinvestment risk and apply closure measures accordingly.

Behavioral tendencies summarized in Table 1, Summary of Unauthorized Trail Types should inform closure intensity, resource prioritization, and anticipated monitoring needs.

Figure 9: Constructed features, such as the jump shown here, often indicate that the trail is a purpose-built trail.

5.2. Overview of Closure Methods and Obstructions

5.2.1. Strategies

Decommissioning requires a balance: closures must deter use and prevent reestablishment while avoiding obstructions with an unreasonably high likelihood of injuring trespassers. The goal is resource protection and behavior change, not harm. At the same time, obstructions that do not present a real challenge are often ignored, and an unauthorized trail is safest when it is unused and no longer functions as a route.

Table 1. Trail Closure Considerations by Trail Type

User Group & Trail Type	Risk of Reopening	Characteristics	Challenges	Closure Approach
Mountain Biking **Purpose-Built Trails**	Level 3: High Risk	• Can include flowy sections for smooth momentum • In-sloped turns for speed and control • Technical features (drops, jumps, rock gardens) • Typically downhill but may include uphill sections	• Strong emotional investment from riders and builders • Easy to rebuild due to terrain conditions • Requires comprehensive and persistent closures	• Use all-or-nothing approach • Ensure closures are comprehensive and persistent to prevent reopening
Mountain Biking **Connector Trails**	Level 2: Moderate Risk	• Utility-based rather than experience-focused • Less emphasis on rider engagement • Can be uphill or downhill depending on connectivity needs	• Less emotional investment but high practical use • Users may create alternative shortcuts if a major time saver is removed	• If the unauthorized trail serves a clear need, consider a sanctioned alternative • If no alternative, match closure intensity to trail utility: - Highly useful: Stronger closures with obstructions and dense brush - Minor shortcuts: Less aggressive methods may suffice
Hiking **Destination-Driven Trails**	Level 3: High Risk	• Steep and direct routes to a specific feature • Typically out-and-back format • Strong attraction due to viewpoints, rock formations, or ruins	• Blocking entrances is ineffective. Users will find alternate routes • Attraction visibility increases difficulty of closure • High-use destinations may require a sanctioned alternative	• If the destination is not sensitive, consider a sanctioned alternative • If closure is necessary: - Entire route must be obscured, especially in visible areas - Use all-or-nothing approach - For highly fragile resources, consider intensive non-natural measures
Hiking **Connector Trails**	Level 1: Low Risk	• Created for efficiency, bypassing longer routes • Often steep and direct • Frequently used to cut switchbacks or bypass fire roads	• Exists solely for convenience. Easier to close • Users must find rerouting too difficult to be worth it	• Make rerouting more trouble than it's worth • Match closure intensity to: - Traffic volume: Heavily used shortcuts need stronger closure - Shortcut value: Minor advantages may only need symbolic fencing and naturalization

Dense, Consistent Obstruction Spacing

Higher obstruction density (i.e. obstructions per linear foot) can reduce injury potential by limiting the speed users can develop between barriers. Wide spacing between barriers allows momentum to build and increases the likelihood of high-impact collisions. Long gaps between significant obstructions should be avoided.

Full-Route Closure

Treating the entire corridor is typically most effective because success depends on compounding difficulty. Long, open stretches create opportunities for an upstream reroute to reconnect to an intact portion of the trail.

Use of Choke Points (Pinch Points)

Choke points are locations where the trail is forced to pass due to natural barriers on either side, making bypass impractical. Common examples include:

- ridgelines between steep slopes,
- narrow passages between rock outcrops or canyon walls, and
- dense vegetation corridors (e.g., riparian crossings or areas with imposing plants such as cactus or poison oak)

In general, segments bordered by vegetation that cannot be readily trampled are easier to close, and this advantage increases as vegetation becomes more difficult or unpleasant to move through.

Figure 10: Example of a chokepoint. The trail must pass through these two rock outcrops to access a steep "showcase feature." Focusing closure efforts at this chokepoint can help reduce use by limiting access to one of the trail's primary attractions.

Selection of Difficult-To-Remove Obstructions

Obstructions that require little investment to remove, make it more likely they will be altered and removed. As a rule of thumb, if an obstruction was difficult to install, it is more likely to be difficult to remove.

Removal and Deconstruction of Built Features

Constructed elements should be obliterated and construction materials removed (e.g., berms, jumps, rock structures, shaped turns). Dirt and stone used for construction should be scattered or dispersed to prevent easy reconstruction.

Figure 11: Constructed ramp leading to a rock drop. To reduce the trail's appeal, features like this should be fully dismantled, and the materials should be scattered in a manner that makes retrieval and reconstruction more difficult.

Targeting of Showcase Features
Many unauthorized trails have one or two signature features. Emphasis should be placed on making these unusable:

- Constructed showcase features should be obliterated without a trace
- For natural features (e.g., rock drops), obstructions should be dense and imposing leading up to, immediately after, and, if not damaging, directly atop the feature

Direction-of-Travel Considerations
Where a primary direction of travel is apparent (often downhill), obstructions should be oriented to be least approachable from that direction. Where directionality is unclear, orientation should be alternated or designed to be equally discouraging from both sides.

Tie-Ins to Surrounding Features
Obstructions should fully block the tread and extend beyond it to the nearest immovable object (often a shrub, dense vegetation, or rock outcrop). Where no natural tie-in exists, obstructions should extend farther beyond the tread to reduce cut-arounds.

Layering of Methods Where Warranted
For the trails with the highest-risk of reopening, layered obstructions (e.g., brush over wattles) can increase removal effort and make the closure harder to dismantle.

Making Foot Travel Difficult Where Warranted
If reestablishment risk is high, closures should be challenging to traverse on foot, even when the route was built for mountain bikes. This reduces ease of trespass to rebuild.

5.2.2. Materials and Equipment

Materials used in unauthorized trail closures should prioritize environmental compatibility and long-term site recovery. Whenever possible, closure techniques should rely on materials that are biodegradable, locally appropriate, and consistent with surrounding habitat conditions.

General principles include:

- Preference for natural materials such as rock, downed wood, brush, and native vegetation
- Use of biodegradable erosion-control materials when needed
- Avoidance of plastics or other persistent synthetic materials where feasible
- Avoidance of materials that may introduce viable seeds, invasive species, or other contaminants

Additional considerations include:

- Straw wattles should use biodegradable coverings and certified weed-free straw

- Brush used for camouflage or obstruction should be sourced locally when possible and inspected to ensure it does not include invasive plant material

Tools and equipment used during closure work may include hand tools and mechanized equipment as appropriate to the site conditions, scale of work, and resource protection considerations.

5.2.3. Obstruction Types

Fencing

Fencing can be effective in areas with lower user demand, such as locations where trails function as minor shortcuts. It is most commonly installed at unauthorized trailheads, as land managers generally prefer to avoid introducing non-biodegradable materials deeper within intact habitat areas. If used on trails classified as high risk, fencing must be long enough to prevent easy circumvention.

Figure 12: Fencing is most effective in areas with low demand and a high likelihood of voluntary compliance.

Naturalization

The goal of naturalization is to blend former trail tread into the surrounding habitat so it no longer reads as a viable route. Techniques include:

- Vertical mulching, where dead branches are planted upright to mimic live vegetation
- Scattering leaf litter, pebbles, and small rocks to break up the visual trail line

- Strategically placing downed logs and brush to create the appearance of an undisturbed landscape
- Installing biodegradable straw wattles to stabilize soil

These techniques can work well on low-demand trails. However, on trails classified as high-risk, users often ignore light-touch efforts, making more intensive closure methods necessary.

Cholla and Prickly Pear Pads

These native cacti serve a dual purpose: they contribute to habitat restoration while acting as natural deterrents due to their spines. Limitations include:

- Slow to establish: require time (and sometimes watering) to grow large enough to be effective
- Vulnerable when small: pads can be crushed by bike tires, reducing deterrent effect; avoid planting directly in the center of the tread where trampling is likely if the trail reopens

Future choke points: some unauthorized trails persistently reopen despite best efforts. Strategically planted cactus can function as choke points over time. Focus on trail margins and open areas prone to cut-throughs, recognizing that substantial size may take years to achieve. This approach increases the likelihood of successful closure in the future by gradually limiting bypass options and simplifying later closure efforts once cactus matures.

Figure 13: Where reopening is likely, planting cactus along the trail margins may be more effective than planting in the center of the tread. As the plants mature, they can create a chokepoint that concentrates use onto a narrower line for later closure.

Collection & Planting Guidelines

- Harvest carefully: use loppers to clip pads at the joint
- Allow scarring: let pads dry for at least two weeks before planting to reduce infection risk
- Avoid laying pads over non-native weeds: stems with seeds can become entangled in spines

For best results, plant before or during the rainy season to promote establishment without irrigation. If planting during dry periods, install cactus early in the project, since watering becomes impractical once the tread is fully closed.

Container Plants

Large, shrubby native plants (e.g., spiny redberry) can be effective obstructions. Limitations include:

- High cost: purchasing and planting container stock can be expensive
- Vulnerability: if placed in the center of tread, plants are likely to be trampled and killed if the trail reopens

Best placement

- Offset from the riding surface to avoid direct impact
- Position in adjacent open areas where reroutes are likely to form

Rock "Gargoyles"

Large boulders are among the most effective deterrents when used correctly.

Requirements for effectiveness

- Too large to move: generally at least two feet in diameter so a single person cannot easily lift or roll them
- Embedded in soil: bury approximately one-third to two-thirds of the rock to prevent shifting
- Pass the kick-test: if a rock moves when kicked, it must be reburied deeper

Placement strategy

- Place immediately downhill of other obstructions to reduce collision risk at speed
- Close spacing should force dismounts: users should not be able to thread between rocks with a bicycle. The distance from the tip of one pedal to the other is approximately 16–18 inches; spacing should be tighter than this.
- Avoid creating a "rock garden": rocks spaced too far apart can become a technical riding feature

- Tie into natural obstructions: start and end rows near shrubs or existing rock formations to prevent weaving around them
- Orient the most imposing face toward oncoming traffic
- Avoid accidental ramps: rocks should not slope away from users in a way that creates unintended jumps

Figure 14: Rock "gargoyles" should be spaced closely enough to prevent easy weaving by bicycle and embedded deeply enough to make removal difficult.

Logs

Logs can serve as effective barriers in oak woodland areas but are typically scarce in coastal sage scrub.

Best practices for log placement

- Partially embed logs to reduce ease of removal
- Orient diagonally or perpendicular to the tread for stronger deterrence
- Leave branches intact where feasible: remove limbs on the buried side but keep above-ground branches to increase complexity and discourage lifting/dragging
- Tie into vegetation or rock formations to prevent circumvention

Check-Mark Ditches

Ditches can serve as supplemental barriers but must be designed properly to remain effective.

Key features:

- Full tread width: the ditch must span the entire trail and tie into vegetation or rock outcrops
- "Check-mark" profile: a gradual descent leading to an abrupt, near-vertical exit to prevent rolling through
- Minimum approximately 20-inch depth to prevent easy ride-through

Because soil shifts and ditches erode over multiple rainy seasons, ditches should be paired with other techniques.

Preventing reuse:

- Do not leave excavated soil beside the ditch; it can be used to backfill and restore the tread
- Disperse soil downslope in a light, scattered manner (avoid burying vegetation)

Figure 15: When approached downhill, checkmark ditches should have a gradual entry and an abrupt, nearly vertical exit.

Straw Wattles

Straw wattles can be effective when combined with other methods.

Installation guidelines

- Use burlap wattles for biodegradability

- Bury approximately one-third of the wattle's diameter
- Stake heavily: place stakes every 2-4 inches for durability
- Leave stakes protruding approximately 3 inches above the wattle to discourage passage
- Align with slope contour where possible; otherwise place perpendicular to traffic
- Recognize wattles are ephemeral and degrade over time, so pairing with longer-lasting obstructions is necessary

Figure 16: Straw wattles should be densely staked and closely spaced to limit speed buildup.

Brushing-In

Brushing is highly effective when applied correctly.

Best practices

- Densely packed and tall (chest height minimum): low, sparse piles are easy to ride over
- Difficult to remove: thick, tangled brush creates real deterrence

- Prefer dead, stiff, branchy material: species like laurel sumac *(Malosma laurina)* are ideal due to rigidity and unwieldiness
- Interweave material: tangle each branch with the next to increase removal difficulty
- Orient branchy tops toward oncoming traffic for maximum deterrence
- Brush must be sourced carefully to avoid introducing invasive species. Brushing should typically be the final step in a closure project because it blocks access beyond it and limits further work up-trail.

Figure 17: Brushing in should use dead and unwieldy interwoven branches arranged high enough and extended far enough to obscure long visible sections of the trail.

Reshaping the Tread

Many unauthorized trails are intentionally shaped to enhance riding flow. Effective decommissioning must remove these design features:

- Bench cuts: when feasible, backfill or excavate downslope to eliminate the bench profile
- Insloped turns: neutralize or slightly outslope to disrupt flow and encourage slowing or dismounting

5.3. Conducting the Secondary On-Site Assessment

A secondary on-site assessment is often needed to finalize plans and make decisions about which strategies and obstructions to use for a given decommissioning effort. The level of detail will vary depending on reestablishment risk and the entity performing the closure. Trusted contractors may propose a comparable strategy during the estimate site visit, refined through OC Parks feedback. However, the procedures below should be used when OC Parks is directly leading a closure. This includes in-house closures and those performed by a conservation crew.

The assessment can consist of GIS work and/or physically marking the trail. Either method, or both, may be used depending on crew needs, trail characteristics, and staff capacity. A GIS survey can be completed at any time. Because physical marking is involved, field marking should occur shortly before decommissioning.

5.3.1. GIS Assessment

Decommissioning Strategy Layer in Field Maps

The Decommissioning Strategy layer includes line and point features to designate different obstructions:

- Line features: indicate sections where rock "gargoyles," logs, brushing-in, and other techniques will be used
- Point features: represent discrete elements such as signage, trailheads, or choke points
- Overlapping strategies: multiple lines may be placed over the same segment to indicate layered techniques

5.3.2. Viewshed Analysis

Ensuring a decommissioned trail blends into the landscape is critical. Identify key locations in the park where the trail is visible, especially from popular vantage points, entrances, and well-used routes. Prioritize these sections for heavy brushing-in to:

- Clearly communicate closure: users should recognize the trail is permanently closed, not merely obstructed at the entrance
- Reduce attraction: a well-obscured tread is less likely to invite exploration

Execution

Aid & hiker coordination:

- Place an aid at a prominent vista point with a radio or phone
- A second person (the hiker, wearing a reflective vest) walks the trail
- When visible, the hiker records a brushing-in track on Field Maps and/or applies marking paint, stopping when out of sight

Multiple aids:

- If needed, station additional aids at different vantage points to create a more complete visibility map

Post-survey adjustments:

- After field mapping, refine data on a desktop as needed

Final implementation:

- Highly visible areas should receive extra-dense brushing-in to accelerate visual disappearance of the trail corridor

Figure 18: A viewshed analysis conducted with a partner can help identify trail segments visible from nearby vantage points and prioritize those areas for brushing-in.

5.3.3. Assessment With Physical Markings

Pin Flags and Marking Paint

Because Field Maps accuracy is approximately 10 feet, GIS line features should be treated as general obstruction locations (i.e., sections where a technique will be used). Pin flags and marking paint indicate precise placement, using colors coordinated to a field key that identifies obstruction types.

Marking Guidelines

Pin flags (for specific obstructions):

- Used for boulder lines, wattle lines, and check-mark ditches
- Place at the trail edge to indicate exact start/end or alignment

Marking paint (for continuous obstructions):

- Used for brushing-in, cactus placement, rock placement zones, and similar techniques
- Directional arrows:
- Start of placement: arrow pointing in installation direction
- End of placement: arrow facing opposite direction

5.4. Trail Closure Case Study

The following case study illustrates how the planning principles described above apply in practice and highlights the importance of coordinated, full-route closures for frequently-used unauthorized trails.

Effective Trail Decommissioning for Heavily Used Trails: An All-or-Nothing Approach

For trails with high user attachment or utility, decommissioning should follow a resolute, all-or-nothing approach. Partial measures not only risk reopening, rendering restoration efforts ineffective, but can also worsen habitat damage, as users reroute around obstructions and expand vegetation trampling.

5.4.1. Case Study: Unauthorized Trail Between Crystal Cove State Park and Laguna Coast Wilderness

A notable example occurred during the COVID-19 pandemic when an unauthorized trail formed between Crystal Cove State Park and Laguna Coast Wilderness. This trail featured dramatic rock drops, built features, multiple lines around challenging portions, and a steep descent into the arroyo at the trail's midpoint. Closing the trail became a priority due to several critical concerns:

- It crossed between two land management agencies
- It impacted sensitive cultural resources

- It affected a population of a species of special concern

The Failure of Partial Closure

The initial closure attempt targeted only the final two-thirds of the trail near the exit (under one land management agency). This approach failed quickly. Riders would ride most of the trail, and by the time they reached the closure, they had already descended steep hills. Turning around required more effort than pushing through the barrier.

A second attempt, made by the second land management agency, focused on closing only the first few hundred feet from the entrance while leaving the remainder unobstructed. This effort used fresh cut lemonade berry (a species easily trampled) collected from other areas of the park. Riders quickly adapted:

- Knowing the rest of the trail remained open, they tossed the coyote brush aside, smothering native plants
- Staff repeatedly replaced the slash, but riders continued clearing the same path or creating new bypasses, causing more habitat damage than the original trail
- Due to lack of synchronization between agencies, by the time the entry was being repeatedly blocked, the exit had already been reopened

Figure 19: Soft, still-green plant material was easily removed and discarded onto surrounding live vegetation.

The Success of a Unified, Intensive Closure

Ultimately, success came when a contractor was hired to close the entire trail simultaneously using intensive tactics, including:

- Removal of all built features, including insloped turns, rock work, and a makeshift buil

- Increased obstructions (heavy staking of wattles, interwoven brush such as laurel sumac, and check-mark ditches) concentrated near the arroyo where dense vegetation created a natural choke point
- Cactus planting along trail margins
- Brushing-in all trail portions visible from the entrance to deter users from attempting the route

By closing the entire trail at the same time with aggressive measures, the trail remained closed. With the unauthorized trail decommissioned, habitat recovery became possible.

The Takeaway: The Power of Deterrence
For a closure to be effective, the effort required to reopen the trail must be overwhelming, equal to or greater than the effort required to create it. If those installing unauthorized trails believe they can restore a trail with a few hours of work, they likely will. If reopening requires a major undertaking across the entire corridor, they are far less likely to attempt it.

This deterrent effect is strongest when combined with consistent monitoring and rapid intervention whenever closures are breached. A successfully closed trail does not just block access, it convinces users that reopening is not worth the effort.

6. Compliance Coordination

Compliance Coordination ensures that trail decommissioning activities comply with environmental regulations and resource-protection requirements. Although trail decommissioning generally has limited impacts, some disturbance may occur, making it essential that all regulations are followed. The time of year, location, and local site conditions will determine which clearances are necessary.

Not all closures will require every clearance type, but common needs include:

- Sensitive species presence/absence surveys
- Nesting bird surveys (February 15 – September 15)
- Archaeological and paleontological assessments
- Streambed compliance

The associated assessments are conducted by either OC Parks resource staff or qualified contract biologists and specialists. All required checks must be completed prior to project implementation. While the constraints rarely prevent a closure from moving forward, they may establish site-specific restrictions, such as no-dig zones in areas of archaeological significance or timing restrictions for biological protection.

6.1. Determining Required Clearances

The required clearances are determined by (1) timing, (2) the characteristics of the unauthorized trail, and (3) proposed decommissioning methods.

6.1.1. Timing

Seasonal requirements, especially nesting bird season, can drive both scheduling and scope. When feasible, plan decommissioning outside nesting bird season to reduce survey needs and avoid timing restrictions.

6.1.2. Ground disturbance

If the planned methods include any ground disturbance, an archaeological and paleontological survey is typically required (often conducted concurrently). Because most unauthorized trail decommissioning includes some ground disturbance (e.g., tread decompaction, scarification, wattle installation, cactus planting, or other work that breaks the soil surface), surveys should be assumed in most cases.

6.1.3. Proximity to Waterways and Riparian Areas

If decommissioning work is proposed in, across, or immediately adjacent to a streambed, drainage, wetland, or riparian habitat, streambed/riparian compliance considerations may apply, and the closure approach may need to be adjusted to avoid regulated impacts.

Where an unauthorized trail crosses a stream or drainage, disturbance to the bed, bank, and riparian vegetation shall be avoided or minimized to the greatest extent feasible. Unauthorized trail features such as makeshift bridges, ramps, step features, or other user-built structures should be removed carefully, and any inorganic or other unnatural materials should be hauled out and disposed of properly. Soil, fill, slash, tools, equipment, or other materials shall not be placed, staged, or stockpiled within the channel or riparian area. Dead or downed vegetation should not be harvested from riparian habitat for brushing in, and cut or dead vegetation should not be placed where it could alter flow, accumulate in the channel, or affect riparian resources.

Hand tools are preferred for work near stream or drainage crossings where feasible. Decommissioning should focus on closing and restoring the unauthorized trail prism while avoiding direct modification of the channel itself. Closure treatments should also be implemented in a manner that does not leave loose soil or debris where it could be carried into the drainage. Where soil disturbance occurs on slopes or trail segments that drain directly toward a stream, drainage, wetland, or riparian area, appropriate erosion-control measures should be installed as needed to prevent sediment from entering the channel, which may include biodegradable wattles or similar measures.

If motorized equipment is necessary, every effort shall be made to avoid crossing the streambed or entering riparian habitat. Work sequencing should be planned accordingly, such as by treating each side of the crossing separately and working outward toward each trail end. Equipment access routes and turnaround areas should also be planned to avoid streambeds, banks, wetlands, and riparian habitat.

If equipment access would require crossing the streambed, if temporary protective measures appear necessary, or if any work would disturb the bed, bank, wetland, or riparian vegetation, Environmental Compliance shall be consulted in advance to determine whether additional review, avoidance measures, or permits are required. If field conditions differ from what was anticipated and work cannot proceed without such disturbance, work in that area shall pause until Environmental Compliance has been consulted.

6.2. Sensitive Species Surveys

Sensitive species surveys may be required when unauthorized trail decommissioning occurs in areas known or suspected to support special-status wildlife or plant species. These surveys help ensure closure activities do not disturb protected species or damage sensitive habitat in a manner inconsistent with applicable conservation plans, permits, or environmental regulations.

Sensitive species considerations vary across OC Parks properties depending on habitat type, conservation plan coverage, and species presence. The need for surveys is therefore determined on a project-by-project basis through coordination with the OC Parks Natural Resources Program.

All survey requirements and avoidance measures must comply with applicable conservation plans, permits, and regulatory requirements. The OC Parks Natural Resources Program Coordinator (Program Coordinator) will determine the appropriate survey protocols and compliance measures when species protection considerations apply.

Figure 20: Big-leaved crownbeard (Verbesina dissita) is an example of a California- and federally listed threatened species found in OC Parks.

6.2.1. Seasonal Windows and Detectability

Many special-status species can only be reliably detected during specific periods when they are active or identifiable. For example, some plant species may only be identifiable during flowering periods, while certain wildlife species are detectable only during breeding seasons or other active periods.

Because these seasonal windows can influence project scheduling, early coordination with the Program Coordinator is important when planning closure work in sensitive habitats.

Preferred approach: When feasible, schedule unauthorized trail decommissioning outside sensitive survey windows or breeding periods for known special-status species. Planning work outside these periods may reduce survey requirements and minimize timing restrictions.

6.2.2. Coordination and Lead Time

Sensitive species surveys are conducted by qualified OC Parks staff or contracted specialists working under the direction of the Natural Resources Program.

Lead time varies depending on the species of concern, survey protocol, and seasonal detectability windows. Early coordination helps avoid delays in project implementation.

To coordinate a survey, contact the Program Coordinator for the respective park.

The Project Manager should provide:

- A map of the unauthorized trail, including access points and work limits
- A description of the proposed closure methods and anticipated disturbance footprint
- The intended work window
- Any site access constraints or safety considerations

The Program Coordinator will determine whether surveys are required and whether the project may proceed with avoidance measures, monitoring, or timing adjustments.

6.2.3. Survey Timing and Validity

Survey timing and validity periods depend on the species and survey protocol involved. In some cases, surveys must occur within a defined window prior to project implementation; in others, existing biological data may be sufficient.

The Natural Resources Program Coordinator will determine whether additional field surveys are required.

6.2.4. If a Sensitive Species Is Detected

If a special-status species or occupied habitat is identified within or near the project area, the Program Coordinator will provide site-specific avoidance measures or constraints.

These may include:

- Establishing avoidance buffers around occupied habitat
- Adjusting the closure footprint or work methods
- Restricting work during sensitive periods (e.g., breeding or flowering seasons)
- Limiting off-trail travel or material collection in certain areas
- Requiring biological monitoring during implementation

The Project Manager must ensure these constraints are communicated to the crew lead before work begins and are followed during implementation.

In most cases, sensitive species constraints can be accommodated through minor adjustments to work timing, location, or methods.

6.3. Nesting Bird Surveys

To comply with the Migratory Bird Treaty Act, nesting bird surveys are required for projects that involve powered equipment or work where crew members will depart from the unauthorized trail tread into surrounding habitat. Departing the tread is common during trail decommissioning because crews often collect dead and downed material from adjacent habitat to place as obstructions.

In practice, off-tread work occurs at some point for unauthorized trail decommissioning (e.g., collecting and placing dead and downed material). As a result, during nesting bird season, assume nesting bird surveys will usually be required unless the closure plan is specifically designed to avoid off-tread disturbance and powered equipment.

6.3.1. Seasonal Windows and Avoidance

Nesting bird surveys are typically required during the nesting season. In general, February 15 through September 15 is the primary planning window to assume nesting bird protections may apply.

Where applicable, some habitats may have different seasonal windows (e.g., upland versus riparian/general habitat). If an unauthorized trail crosses multiple habitat types, surveys and protections should align with the habitats that will be worked during the proposed implementation period.

Preferred approach: When feasible, schedule unauthorized trail decommissioning *outside* periods when nesting bird surveys would be required for the habitats affected.

6.3.2. Coordination and Lead Time

To coordinate a nesting bird survey, contact the OC Parks Natural Resources Program Coordinator for the respective park. The Program Coordinator will coordinate with and/or contract a qualified avian biologist.

Lead time can be up to two months, depending on biologist availability and scheduling; early planning is essential.

The Project Manager (typically park staff or the Trails and Mapping Administrator) should provide:

- A map of the unauthorized trail, including access points and work limits
- Any site access details and constraints
- The intended work window and anticipated methods, especially powered equipment and off-tread work

6.3.3. Survey Timing and Validity

Surveys should be conducted no more than 72 hours prior to disturbance.

If the closure extends over multiple workdays:

- Clearing/disturbance activities should be completed within five (5) days following a pre-disturbance survey.
- If work does not occur within that timeframe, a new survey is required.

6.3.4. If an Active Nest is Found

The biologist will provide GPS coordinates (and typically field flagging) to the OC Parks Natural Resources Program Coordinator, who will relay the information to the Project Manager.

The Project Manager is responsible for ensuring the crew lead and crew understand and follow avoidance requirements.

Buffer distances vary by species and may range from approximately 50 feet to 500 feet (or as otherwise specified). Within the buffer, no disturbance into surrounding habitat may occur until nestlings have fledged and the nest area is no longer active.

For full details, refer to "OC Parks Best Management Practice: Vegetation Management & Nesting Bird Protocol."

6.4. Archaeological and Paleontological Surveys

Archaeological and paleontological surveys are conducted prior to decommissioning that includes ground disturbance, which includes most projects.

6.4.1. Initiating Surveys

The Project Manager (typically park staff or the Trails and Mapping Administrator) contacts the Cultural Resources Operations Manager to request survey coordination.

6.4.2. Lead Time and Deliverables

Plan for at least one month of lead time from the date the survey needs to be complete to coordinate field schedules.

After the field survey, allow up to three weeks for processing and reporting.

6.4.3. Results and Handling

Paleontological surveys will document whether sensitive paleontological resources are present and identify sensitive areas (or confirm none were found).

Archaeological Surveys

- If no sites are identified, a report may be issued and can be retained in the project file.
- If sensitive sites are identified, the formal report is typically retained by the Archaeological Curator, and the Project Manager will receive actionable constraints (e.g., no-dig zones) needed to implement the closure.

No-Dig Zones and Confidentiality

- When sensitive sites are present, locations may be flagged in the field to communicate constraints to the crew. Beyond what is necessary to implement avoidance, additional details are not required for field operations.

Sensitive archaeological site location information must be handled carefully:

- Do not distribute site location details beyond authorized staff.
- Do not store sensitive location information on unauthorized digital platforms.
- If an unauthorized trail later reopens and requires re-closure, the future project coordinator should coordinate with the Archaeological Curator to confirm any previously identified no-dig zones and constraints.

6.4.4. Re-closure

Archaeological/paleontological surveys generally only need to be completed once per unauthorized trail, unless there are changes in the proposed disturbance footprint or method that would warrant re-review. If an unauthorized trail is reopened after a completed survey and then re-closed, additional surveys are not typically required, but previously established constraints remain in effect.

6.4.5. Streambed and Riparian Compliance

(Section intentionally on hold—pending completion.)

6.5. Roles and Responsibilities in Compliance Review

6.5.1. Project Manager

The Project Manager is the OC Parks staff member assigned overall responsibility for planning coordination, compliance coordination, field communication, and quality assurance for a given unauthorized trail closure project. The Trails and Mapping Administrator often serves as the Project Manager, but the roles are not synonymous; the Trails and Mapping Administrator has fixed program responsibilities, and the Project Manager role may be assigned to another qualified staff member depending on workload, park needs, and project context.

- Determines which clearances are likely required based on timing, location, habitat, and proposed methods
- Initiates and coordinates required surveys with the appropriate program staff and specialists
- Provides maps, access details, and work descriptions needed for surveys and compliance review

- Communicates all constraints (buffers, no-dig zones, avoidance areas, timing requirements, equipment limitations) to the crew lead and ensures understanding before work begins
- Conducts periodic check-ins during implementation to verify compliance requirements are being followed
- Keeps the park's Supervising Ranger informed of schedule, constraints, and progress
- Ensures surveys and constraints are documented for recordkeeping

6.5.2. The Natural Resources Program Coordinator

The Natural Resources Program Coordinator is responsible for reviewing unauthorized trail decommissioning projects for biological resource considerations and determining what biological compliance measures, if any, are required.

- Reviews the UA Decom Request and project details for potential biological constraints
- Determines whether sensitive species surveys, nesting bird surveys, monitoring, avoidance measures, or timing restrictions are required
- Coordinates with qualified OC Parks staff and/or contract biologists to complete required biological surveys
- Provides the Project Manager with clear, site-specific biological constraints for field implementation
- Advises on appropriate work windows, survey validity, and whether additional biological review is needed
- Provides additional direction if biological concerns are identified before or during implementation

6.5.3. Resource Program Staff / Qualified Specialists

- Conduct required surveys and provide findings and constraints in a form usable for field implementation (e.g., buffer distances, avoidance areas, and timing windows)
- Provide field flagging or other on-site markers when appropriate and consistent with resource protection requirements

6.5.4. Crew Lead

- Implements work consistent with constraints and ensures the crew follows avoidance areas and restrictions
- Notifies the Project Manager promptly if field conditions require adjustments or if constraints cannot be met as planned

6.5.4. Volunteer and Partner Participation

Volunteers and partner organizations can play an important role in supporting unauthorized trail management efforts when working under OC Parks direction. Because closure work can affect sensitive resources and requires careful implementation, volunteer participation should occur only through organized efforts coordinated by park staff.

General expectations include:

- Volunteers should participate only in activities that have been planned and approved by OC Parks staff
- Volunteers should not independently dismantle unauthorized trails or install closure features outside of organized workdays
- Volunteers and partners who observe unauthorized trail creation or reopening should report the location to park staff
- When participating in closure projects, volunteers should follow the same environmental protection and safety standards required of staff and contractors

These protocols help ensure that closure work is carried out safely, consistently, and in a manner that protects sensitive resources.

6.6. Translating Compliance Findings into Project Constraints

Compliance findings should be converted into clear, implementable "field rules" before work begins. At minimum, the Project Manager should ensure the crew lead receives and understands:

- Where work can and cannot occur (mapped limits, flagged avoidance areas, buffers, no-dig zones)
- What methods are allowed or prohibited (e.g., no ground disturbance in flagged areas; restrictions on powered equipment; limitations on collecting material from certain habitat areas)
- When work can occur (timing windows, survey validity periods, stop-work triggers if conditions change)
- How constraints will be communicated on-site (flagging, briefings, printed map excerpts, and a simple constraint summary)

  If constraints are complex, provide a short constraint summary that the crew lead can reference in the field.

6.6.1. Documentation and Recordkeeping

All completed compliance steps must be documented prior to implementation and retained for future reference, especially because unauthorized trails may reopen and require follow-up action.

At minimum:

- Record completion of required surveys/clearances in the OC Parks Unauthorized Trail GIS Database
- Store survey reports and related documentation in the designated project folder where the unauthorized trail closure records are maintained

For archaeological resources:

- Only store and share "no-find" reports broadly within authorized internal channels
- Handle sensitive site information per direction from the Archaeological Curator (avoid distributing or storing sensitive locations beyond authorized personnel and systems)

7. Communication and Signage

Communication and Signage guide how OC Parks informs the public about unauthorized trail closures, supporting clarity, transparency and compliance. The purpose of messaging is not solely to share information; it also helps shape user behavior in ways that promote public safety and protect cultural and natural resources. Clear, accurate and consistent communication across parks, programs and external partners is essential. This does not require identical wording, but messaging that remains aligned and coherent across audiences.

Timely, well-placed communication can reduce frustration regarding unauthorized trail closures and demonstrate the broader, long-term effort to conserve fragile resources. The use of signage should be evaluated on a case-by-case basis based on the exposure of the unauthorized trail.

7.1. Communication Goals and Principles

OC Parks communication regarding unauthorized trails should be guided by the following goals and principles:

- Lead with public safety. Communication efforts should elaborate on the importance of staying on marked trails.
- Support resource protection and compliance. Communications should encourage behaviors that reduce unauthorized trail use and creation, thereby limiting erosion, habitat fragmentation and other impacts.
- Explain the "why." Messaging should emphasize that unauthorized trails can impact habitat, sensitive species, cultural resources, and water quality, and that closures are often necessary to meet conservation plan and easement requirements.

- Maintain consistency while tailoring delivery. Messages should be aligned across OC Parks while allowing tone and level of detail to vary appropriately for internal staff, partners and the public.
- Avoid unintentional promotion of sensitive locations. Communications should not share the existence or location of unauthorized trails, sensitive resources or cultural sites.
- Prioritize accuracy. All messaging should be factual and consistent with adopted plans, policies and safety considerations.
- Messaging should focus on social norms (making desired behaviors seem attractive, practical and the most socially acceptable), consequences (danger/risk of injury, fines or environmental harm), and provide clear instructions for where people can go.

7.2. Internal Coordination and Messaging Alignment

Decisions about whether a closure will be publicly communicated, and which channels will be used, should be made by the park's supervisory staff in coordination with their Operations Division and OC Parks Communications Division, with input from the Trails and Mapping Administrator, as appropriate. The Project Manager is responsible for coordinating trail sign placement and for coordinating with the OC Parks Communications Division for any public-facing messaging (including social media content, public signage, website updates, etc.), when applicable.

Park staff are responsible for ordering and installing signage, and must ensure that sign content matches the messaging direction established by the Supervising Ranger and the Project Manager using OC Parks signage standards and guidelines. Any new signage addressing unauthorized trails, whether general educational or closure-specific, should be reviewed for content and consistency by Communications, Operations, the Trails and Mapping Administrator and park staff (for site-specific projects).

Staff, volunteers and partners should be prepared to give clear and consistent responses about closures and available alternatives, if asked by the public. When messaging involves County ordinances, Operations should verify the information. For sensitive closures that are not publicly announced, essential details should still be shared internally with staff, partner organizations and volunteers on a need-to-know basis to ensure consistent communication in the field.

7.2.1. High-Profile Closures

For closures involving high-demand unauthorized trails that are likely to generate public attention, the Project Manager shall notify the Communications Division as soon as practicable after the closure decision has been made. The Project Manager shall

coordinate with Communications staff to share relevant background information needed to develop accurate, context-sensitive messaging. This may include the park in which the trail is located, the trail's known history or level of public familiarity, the reasons for closure, the anticipated timing of closure activities, and other details necessary to support informed communication.

The Project Manager shall also advise Communications staff of any considerations that may affect how the closure is discussed publicly, including ecological sensitivity, enforcement concerns, or the possibility that detailed location information could unintentionally attract additional use. Public messaging should balance clarity with discretion so that it is understandable to the intended audience without unnecessarily identifying or promoting the route.

In coordination with the Project Manager and other appropriate staff, the Communications Division shall determine whether communication is warranted and, if so, the appropriate timing, format, and method of distribution.

7.3. External Communication Channels

7.3.1. OC Parks Website

The OC Parks website should serve as the primary repository for detailed, evergreen information, including:

- Why unauthorized trails are problematic
- How to recognize unauthorized trails
- Why OC Parks cannot simply make unauthorized trails official
- How decisions are made regarding closures
- General methods used to decommission unauthorized trails

The website should also include practical ways the public can help protect park resources and clear instructions for reporting new unauthorized trails (including contact information for the Trails and Mapping Administrator). Parks with frequent unauthorized trail issues should link to this page prominently.

7.3.2. Social Media

Social media may be used for general education about the impacts of unauthorized trails and the benefits of restoration. Public posts about specific closures should be used selectively and only when determined appropriate by the Communications Division with input from the Project Manager, park supervisory staff, Operations Division and the Trails and Mapping Administrator.

Posts may be appropriate when:

- The content avoids identifying precise location information
- In response to public concern
- General education

7.3.3. Public-Facing Signage at Appropriate Locations

Trailhead signs should use consistent OC Parks closure language and, when relevant, include the applicable County ordinance references. Messaging should be direct, polite and easy to understand. Sign design should be consistent with other OC Parks signage. In many cases, signs are more appropriate outside the viewshed of authorized trails (e.g., slightly down the unauthorized route) to reduce the chance of attracting additional users while still providing clear notice to those attempting to access the closed route.

7.3.4. Brochures and Kiosk Boards

Brochures and kiosk boards should provide brief, easily digestible information consistent with the website. Because these formats are used in the field, content should be concise and avoid being overly detailed.

7.3.5. Press Releases and Publications

For high-profile closures that are likely to generate significant public concern or media attention, a press release may be appropriate. Press releases should focus on public safety, resource protection, obligations to conservation plans and easements, and the broader strategy for concentrating use on authorized trails.

7.4. Public Reactions and User Concerns

When a well-used or long-standing route is closed, it is common for park users to express concerns. These may be shared directly with staff, through partner organizations or in public forums such as commission or subcommittee meetings.

Staff should prioritize listening, acknowledging users' perspectives, and responding with calm professionalism. Acknowledging concerns does not imply agreement but demonstrates respect.

In both personal communication and public messaging, OC Parks should emphasize that route closures are guided by established obligations, including conservation plans, easements and adopted park planning documents. This applies to any route not formally recognized in those documents, regardless of its age or past use.

OC Parks' mission is to protect natural and cultural resources by focusing use on authorized trails, as unauthorized routes can extend impacts into previously undisturbed areas.

All interactions with staff, through partner organizations or in public forums, should leave the public confident that their input was taken seriously and that decisions are grounded in public safety and resource protection responsibilities.

7.5. Criteria for When Signage is Appropriate

Trailhead signage may be appropriate when:

- The route is already widely known, and trailhead signage is unlikely to measurably increase awareness. In these cases, the expected compliance benefit should outweigh the visibility risk.
- Repeated closure failures indicate that additional explanation at or near the access point may materially improve compliance (e.g., a more interpretive explanation focused on habitat restoration), and this approach has been approved through internal coordination

Signage just beyond the viewshed of authorized trails may be appropriate when:

- Trailhead signage is deemed inappropriate, but repeated attempts to access the closed route are expected; signage placed slightly down the unauthorized route provides clear notice to those who proceed and can support enforcement

Signage just beyond the viewshed of authorized trails may be appropriate when:

- Trailhead signage is deemed inappropriate, but repeated attempts to access the closed route are expected; signage placed slightly down the unauthorized route provides clear notice to those who proceed and can support enforcement.

Interpretive signage near kiosk boards or other high-visitation locations may be appropriate when:

- A park has recurring issues with unauthorized trail creation and would benefit from general education at primary entry points.
- A high-profile closure has recently occurred and OC Parks needs broader messaging near major junctions or entrances without placing a sign at the closure location.

Trailhead signage is generally not appropriate when:

- The route has some demand but is not universally known (this is the most common situation).
- The route traverses or provides access to highly sensitive cultural or biological resources.

Figure 21: In many cases, trail signage should be placed a short distance down the unauthorized trail so it does not immediately alert passersby to the trail's presence and inadvertently encourage use.

7.6. Outreach to Partners and Volunteer Groups

Partner organizations and volunteers play an important role in shaping public understanding and should be aligned with OC Parks policy and messaging regarding unauthorized trail decommissioning. OC Parks staff are responsible for sharing these guidelines with partners and volunteers and providing clear expectations for how questions from the public should be handled. Partners and volunteers should be prepared for public responses and should coordinate with OC Parks staff if concerns escalate.

Figure 22: Tasks such as installing straw wattles and planting cactus are well suited for volunteer work.

8. Physical Decommissioning

The Physical Decommissioning phase represents the point at which planning transitions into on-the-ground implementation. This phase relies on the groundwork established in earlier steps, including prioritization, resource evaluation, compliance coordination, and trail closure planning.

The designated Project Manager is responsible for communicating the approved closure plan to the selected crew and ensuring expectations are clear before work begins. Roles, responsibilities, and lines of communication should be established with the crew supervisor at the outset.

Site visits are essential to ensure the work is being carried out effectively. The frequency and intensity of oversight should be scaled to the complexity of the closure and skill level of the crew. During site visits, staff verify that closure methods are being implemented as planned and that work adheres to best practices, including any environmental or cultural protection requirements identified during compliance review.

On-the-ground conditions often differ from what was anticipated during conceptual planning, and some level of adaptive problem-solving is often necessary. When adjustments are required, staff should work with the crew supervisor to determine the best

course of action in a manner consistent with closure objectives and compliance constraints.

Once physical work is complete, a designated person inspects trailheads and closure points to confirm that access has been effectively blocked, camouflage is adequate, and, if appropriate, approved signage has been installed correctly. A closure is considered successful when continued use is no longer apparent and the route is positioned for recovery, allowing it to blend back into the surrounding landscape over time.

Figure 23: Viewshed of an unauthorized trail before brushing in (left) and after brushing in (right).

8.1. Responsible Parties and Roles

Physical decommissioning requires clear accountability. The roles below are minimum expectations; OC Parks may add additional roles as needed.

8.1.1. Project Manager

The Project Manager is the OC Parks staff member assigned overall responsibility for planning coordination, compliance coordination, field communication, and quality assurance for a given unauthorized trail closure project. The Trails and Mapping Administrator often serves as the Project Manager, but the roles are not synonymous; the Trails and Mapping Administrator has fixed program responsibilities, and the Project Manager role may be assigned to another qualified staff member depending on workload, park needs, and project context.

Responsible for:

- Conducting an initial field briefing with the Crew Lead (and crew when feasible)

- Coordinating site visits and quality assurance checks during implementation
- Communicating expectations, schedule constraints, and closure priorities
- Resolving field issues and approving any necessary adjustments that remain consistent with closure objectives and compliance requirements
- Conducting the final inspection of trailheads and closure points and documenting completion

8.1.2. Crew Lead (crew supervisor)

Responsible for:

- Day-to-day crew direction and safety
- Ensuring the methods communicated by park staff are implemented according to specification
- Maintaining consistent quality and correcting deficiencies as they arise
- Communicating progress, constraints, and emerging issues to the Project Manager

8.1.3. Park Supervising Ranger

Responsible for:

- Remaining apprised of progress and significant developments
- Supporting resolution of major issues and ensuring implementation aligns with park operations and applicable best management practices

8.2. Crew Safety

Crew safety is paramount during closures. All typical trail-work hazards apply; however, unauthorized trails often have specific risk exposures because corridors are narrower and vegetation contact is more frequent.

8.2.1. Downhill Bicycle Traffic

- Downhill bicycle traffic is one of the most serious hazards during decommissioning on steep, fall-line routes. Riders may approach quickly and quietly
- Crews should maintain situational awareness and listen for approaching riders
- When a bicycle is heard or seen, crew members should immediately remove tools and materials from the tread, step to a safe position, and verbally alert the rider to slow down

8.2.2. Rattlesnakes

- Risk increases when crews travel off-trail or work in brushy, warm conditions

- Crews should look before stepping and avoid placing hands/feet where visibility is limited
- Snake gaiters should be required when traveling off-trail in scrub
- If a rattlesnake is encountered, the crew should back away and wait until the animal vacates the immediate work area

8.2.3. Ticks

- Ticks are more likely to be encountered in unbrushed corridors and dense edge vegetation
- Conduct thorough tick checks after fieldwork
- Early detection and removal reduces risk of disease transmission

8.2.4. Poison Oak *(Toxicodendron diversilobum)*

- Poison oak is common in Southern California and may present as a shrub, vine, or herbaceous growth. Contact can cause rash and blisters in susceptible individuals, and the oil that causes the rash can be transferred to tools, clothing, and vehicles.
- Crews should avoid contact and prevent cross-contamination of equipment and vehicle seats
- Where poison oak is dense, minimize work in that area and allow it to recolonize the former tread as a long-term deterrent, consistent with resource goals

Figure 24: Poison oak (Toxicodendron diversilobum), shown here with its characteristic clusters of three leaflets.

8.2.5. Bush Rue *(Cneoridium dumosum)*

- Bush rue can deposit oils that cause a blistering reaction when combined with sunlight (severity varies by individual).
- Crews should avoid contact and use protective clothing when working near bush rue in coastal sage scrub

Figure 25: Bush rue (Cneoridium dumosum) has short, oblong evergreen leaves, white flowers, and a characteristic citrus-like odor. Photo Credit: Mary Wloch, 2019 CalFlora

8.3. Public Safety During Closure Work

Unauthorized trail closures are typically conducted in areas where visitors may still be present. Staff and crews should remain aware of potential interactions with hikers, cyclists, and other park users during implementation.

Best practices include:

- Maintaining awareness of approaching visitors while working on or near unauthorized routes
- Communicating courteously with visitors who inquire about the work while avoiding confrontational interactions
- Coordinating with Park Rangers when closure work occurs in areas of higher visitation or where user conflicts are more likely

Where appropriate, temporary signage or other simple notifications may be used to inform visitors that restoration work is underway. Ensuring safe interactions during closure work helps reduce confusion and supports positive public understanding of restoration efforts.

8.4. Pre-Project Crew Briefing and Coordination

When feasible, closures should begin with a brief overview with the crew covering:

- The purpose of the closure and the resource concerns driving the work
- Expected interactions with unauthorized users and how to respond to negative reactions (de-escalation, referral to park staff, and safety-first posture)
- Unique hazards of this work and how risks will be minimized
- A broad overview of the closure methods being used and the expected standard of finish

This level of briefing is especially important for new Crew Leads. Experienced Crew Leads may require less orientation, but should still receive a clear scope, constraints, and success criteria.

For new Crew Leads, the Project Manager should provide an on-the-ground walkthrough of the route and demonstrate methods at representative locations. This can occur while the remainder of the crew performs low-impact startup tasks (e.g., staging materials or establishing a staging area for vehicles). Plan for this walkthrough to take several hours when a Crew Lead is unfamiliar with these methods.

Compliance constraints must be explicitly reviewed in the field (e.g., no-dig restrictions, dig depth limits, avoidance zones, and wildlife buffers). The Crew Lead should be able to repeat the restrictions back and identify where they apply before work proceeds.

8.5. Site Visit Scheduling and Oversight Strategy

Site visits are required for major decommissionings and should be scaled to the complexity and sensitivity of the closure, and the Crew Lead's experience with OC Parks' closure methods.

A practical oversight model is:

New Crew Lead: approximately two extended site visits per week early in the project until methods and expectations are consistently met, then taper to weekly check-ins.

Experienced Crew Lead: an initial strategy/constraints visit, followed by one to two follow-up checks as needed.

To avoid disrupting the crew and to maintain a collaborative tone, the Crew Lead should receive advance notice of planned site visits whenever practicable.

8.6. Quality Assurance During Implementation

During site visits, the Project Manager should walk to active work areas and verify that:

- Closure methods are being implemented as planned and to the standard described in the closure plan
- Obstructions are placed in a manner that reduces the likelihood of removal or bypass
- Work is not creating new impact paths or encouraging reroutes around closure points
- The closure is cohesive, meaning methods are consistent along the corridor and not concentrated only at the first few access points

Feedback should be clear, timely, and specific. Decommissioning can be misinterpreted as "demolition" by the uninitiated, when in practice it requires deliberate placement, camouflage, and restraint to avoid additional resource impacts. Early correction is critical; once a crew has advanced, asking them to backtrack may cause damage to completed work and can be counterproductive.

8.7. Ensuring Compliance

During implementation, staff must verify that work complies with all restrictions identified during compliance review. Examples include:

- Adhering to no-dig zones or dig-depth limitations identified by archaeological/paleontological surveys.
- Avoiding off-trail collection or staging in nesting bird buffers or other avoidance areas.
- Preventing unnecessary vegetation impacts

8.7.1. Harvesting Dead Vegetation for Camouflage/Obstructions

If dead branch material is harvested for closure work, it must be done carefully to avoid avoidable habitat damage and negative public perception. Improper harvesting can communicate that resource protection is not a priority.

- Confirm branches are dead (e.g., dry "snap" rather than flex; scratch test for green tissue; small cross-section check if uncertain)
- Avoid dragging branches across the ground, which can create new impact paths and invite route reestablishment. Carry material off the ground; use two-person carries when needed.

- Minimize trampling by selecting foot placement and moving deliberately through vegetation

8.7.2. Housekeeping

All non-biodegradable materials must be removed at the end of work (e.g., pin flags, plastic flagging, trash, packaging). Youth crews in particular may need reminders to prevent inadvertent littering.

Figure 26: Dead vegetation, or vegetation with large dead branches, can be harvested for brushing in.

8.8. Adaptive Management and Problem Solving

Conditions, timelines, and constraints may shift during implementation. The Project Manager and Crew Lead should prioritize: (1) safety, (2) compliance, and (3) closure effectiveness.

8.8.1. Common Scenarios

Time Constraints / Production Slower Than Anticipated

Options may include:

- Extending the work window when possible
- Re-sequencing effort to prioritize the highest-risk locations (e.g., trailheads, choke points, highly visible features, and attractant elements) while still ensuring the entire corridor receives some treatment so no section remains clearly open

- Prioritizing the most durable and difficult-to-remove methods when a full suite is not feasible

Active Dismantling ("Break-Ins") During the Project
If users are removing work as it is installed:

- Reassess schedule and method priority immediately
- Increase emphasis on methods that are more resistant to removal
- Document the observed behavior to inform future closure strategy and enforcement coordination

Materials Unavailable
- If planned materials (e.g., adequate brush, stones, cactus pads, wattles) are not available, substitute with what is locally appropriate and increase density where needed to maintain effectiveness, without expanding the impact footprint beyond what is permissible

Stacking Constraints Prior to Starting
- If major constraints prevent an effective closure (e.g., overlapping buffers, unsuitable soil conditions, missing materials), postponement may be preferable to initiating an incomplete closure that is likely to fail or cause additional impacts

8.9. Final Inspection and Documentation

Once physical work is complete, the Project Manager (or designee) should inspect all known access points ("trailheads") and key closure locations to confirm:

- Access is effectively blocked and bypass routes are not obvious
- Camouflage is adequate and does not draw attention from popular vantage points
- The finished condition is visually discouraging and does not invite exploration
- If signage is part of the approved plan, it is installed correctly and in the approved location(s)
- The area is free of trash, tools, flagging, and other non-biodegradable materials
- Disturbance near trailheads is minimized and does not resemble new construction

Following inspection, the Project Manager should document completion details in the OC Parks Unauthorized Trail GIS Database (including dates, crew, methods used, notable constraints, any field adjustments, and photo documentation from representative points and key vantage views).

Figure 27: Former trail entry after closure. The area should draw little attention and show no signs of reentry.

9. Monitoring

9.1. Introduction

Monitoring evaluates the effectiveness of unauthorized trail closures and supports long-term stewardship by ensuring closures remain intact and ecological recovery occurs. Monitoring also provides the mechanism for identifying and responding to closure breaches before unauthorized use becomes reestablished.

Monitoring may be conducted by a variety of parties depending on the project and available resources. In some cases, a contractor may be retained to perform monitoring for a defined period; in others, monitoring may be carried out by park staff or the Trails and Mapping Administrator. Clear assignment of monitoring responsibility is essential to ensure consistency and follow-through.

On-the-ground monitoring focuses on unauthorized trailheads and closure points, where staff or contractors assess evidence of renewed use, vegetation recovery, and the condition of physical barriers or signage. Interior foot-based monitoring, meaning walking on the closed corridor itself (including across or along the closure work) to evaluate condition, is generally avoided to prevent trampling that can reestablish a visible line of

travel or inadvertently reopen the path. Instead, drone-based monitoring is used to document corridor conditions and recovery over time without additional impact.

Site visits begin with a first check at 2–8 weeks post-closure ("Survey 1"), then occur every six months through year 2, with frequency typically decreasing to once annually thereafter. Findings from each visit are documented on a mobile fillable survey that records the condition of the closure and the location of any breaches. After five consecutive years with no documented breaches, the trail may be considered functionally closed, and routine monitoring may be discontinued.

If a breach is detected, prompt corrective action should be taken to reclose the route and prevent reestablishment. In some cases, the contractor may be responsible for rapid response; if not, it is OC Parks' responsibility to respond quickly by engaging an available crew or completing the work in-house. By keeping a close watch on completed work and responding quickly when reopenings occur, this final phase marks the transition from active closure to long-term stewardship.

9.2. Roles and Responsibilities

9.2.1. Closure Monitor (Field Role)

The Closure Monitor may be a designated Park Ranger, Park Maintenance Inspector, the Trails and Mapping Administrator, or a member of a contractor's team. Continuity of personnel is helpful but not required as long as the monitoring protocol and documentation standards remain consistent. Responsibilities include:

- Conducting scheduled site visits to known entry points and predetermined vantage points
- Assessing closure condition, evidence of renewed use, and visibility of the former corridor
- Completing the mobile monitoring survey and attaching photo documentation

9.2.2. Trails and Mapping Administrator

Responsibilities include:

- Maintaining monitoring records in the OC Parks Unauthorized Trail GIS Database
- Establishing and managing the monitoring schedule (calendar-based)
- Coordinating drone flights and ensuring imagery is archived to the appropriate GIS locations
- Coordinating rapid response with the Park Supervising Ranger and documenting follow-up actions

9.2.3. Park Supervising Ranger

Responsibilities include:

- Remaining apprised of monitoring results, breaches, and response actions
- Coordinating rapid response with the Trails and Mapping Administrator
- Assigning or confirming the Closure Monitor for upcoming monitoring periods and ensuring operational support

9.2.4. OC Park Rangers

Responsibilities may include:

- Responding to reports of reentry, especially when incidents are reported in real time
- Periodically patrolling the area
- Monitoring cameras, if installed
- Issuing citations when individuals are observed actively rebuilding or maintaining an unauthorized trail (at Ranger's discretion)
- Monitoring a designated area, closure point, or unauthorized trail entrance, as assigned

9.2.5. Drone Pilot

A trained and certified park staff member (often the Trails and Mapping Administrator) who has the required approvals, software, and operational readiness. Responsible for:

- Conducting planned flights consistent with applicable policy and safety requirements
- Capturing and organizing imagery to support repeatable comparisons over time

9.2.6. Visual Observer

- Assists the Drone Pilot with hazard awareness and situational monitoring during flights

9.3. Monitoring Methods

Monitoring focuses on three complementary methods:

- On-the-ground monitoring at entry points and vantage points
- Drone-based monitoring (preferred for corridor review)
- Desktop monitoring (supplemental indicator only)

These methods should be used together to confirm closure integrity, detect early breaches, and track recovery.

9.3.1. On-the-Ground Trailhead Monitoring

On-the-ground monitoring focuses on all known entry points, which may include more than two trailheads, and one to two predetermined vantage points where the former route was visible prior to closure.

To avoid unintentionally reestablishing a visible line of travel, monitors do not walk the closed corridor (even briefly) during routine monitoring. Routine field monitoring is limited to authorized trails, entry points, and predetermined vantage points. Walking the former tread is reserved for corrective work when a breach response is actively being implemented.

During each visit, the Closure Monitor completes the mobile monitoring survey and documents findings with photos. For example, the survey will prompt the monitor to:

- Check each trailhead/entry point for signs of reentry or circumvention
- Walk short distances along adjacent legal trails (e.g., up to approximately 500 feet in both directions as appropriate) to look for new spur entries or reroutes. This is done on authorized trails only and does not involve walking the closed corridor.
- Look for indicators of renewed use: crushed vegetation, freshly exposed soil, footprints/bike tracks, cleared brush, moved rocks/branches, or fresh tread definition
- Confirm barriers/obstructions remain intact and effective, and that signage (if used) remains correctly placed and legible
- Check for new “work-arounds” (bypasses, side routes, or parallel tracks)
- At vantage points, the monitor assesses whether the former corridor remains visible or is blending back into surrounding habitat. These locations are ideal for repeatable before/after photos

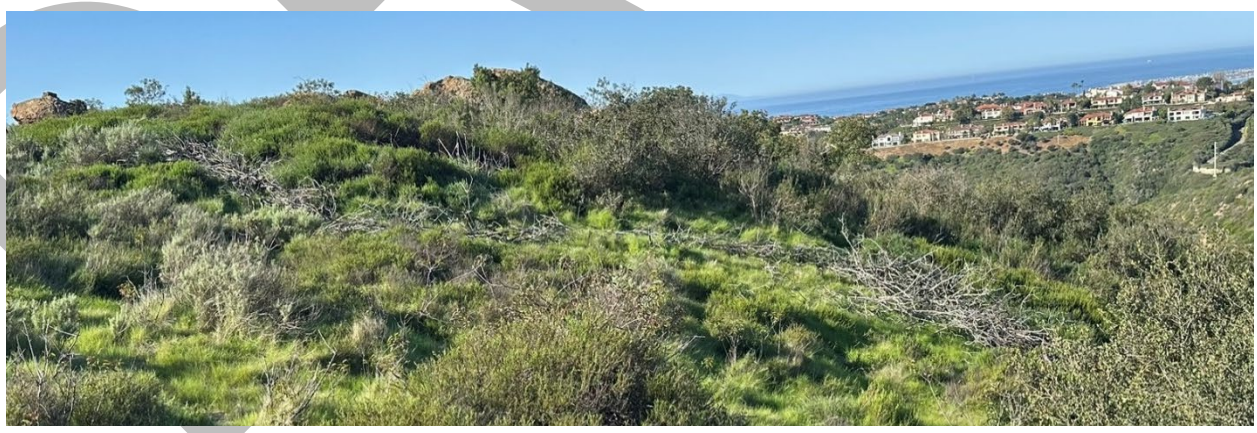


Figure 28: Long brushed-in sections visible from the trail entry should be inspected to confirm that the brush remains intact and has not been moved or tossed aside.

9.3.2. Drone-Based Monitoring

Drone-based monitoring captures aerial imagery of the former route and surrounding area to document corridor condition and recovery without reintroducing foot traffic.

Best practices include:

- Fly from a location where the drone can maintain visual line-of-sight for the duration of the flight
- Conduct one to two flights as needed to capture the full corridor and key closure points.
- Use repeatable flight planning where feasible so imagery can be compared across time (consistent altitude, coverage, and photo points)
- Archive imagery promptly and link it to the closure record in GIS

9.3.3. Desktop Monitoring

Desktop monitoring uses publicly available indicators (e.g., fitness app heatmaps) to look for changes in activity patterns near the former route. This method can help confirm suspected use or identify areas to prioritize for field checks. However:

- Heatmaps do not confirm non-use (users may disable tracking or data may be delayed)
- Apparent activity may persist temporarily due to rolling data windows
- Desktop monitoring should be treated as supplemental, not determinative

Heatmap interpretation note:

Heatmaps can continue to show a "trail line" for months after a closure because many platforms update slowly and display a rolling history (often the last several months to a year). As a result, a visible line does not necessarily mean the route is still being used today. The most useful signal is the trend: the line should gradually fade over time. If the line stays the same strength or becomes more pronounced compared to the post-closure baseline, that suggests renewed use and should trigger follow-up field verification.

Figure 29: Users of unauthorized trails are often aware that park staff may use fitness-tracking heatmaps to identify unauthorized routes. In some cases, users have responded by posting signs that discourage others from recording or sharing trail activity.

9.3.4. Monitoring Schedule and Duration

A monitoring schedule should be established immediately after closure and entered into the Trails and Mapping Administrator's calendar, with visibility provided to the Park Supervising Ranger. Schedules should be adjusted based on demand level, breach history, and sensitivity of resources.

Final Inspection and Documentation (Quality-Control Check; Not a Survey). See Section 8.9.

Immediately after physical work is completed, staff complete a brief trailhead/closure-point check to confirm the closure was implemented as intended (e.g., access is effectively blocked, key obstructions are in place, and any approved signage is installed correctly). This step is a quality-control visit only and is not considered "Survey 1."

Survey 1: Post-Closure Baseline Check

- Timing: 2–8 weeks after closure
- Methods: On-the-ground monitoring + drone imagery
- Purpose: Document the post-closure baseline condition and detect early reopenings.

Routine Monitoring Cadence

- Years 0–2: Every six months
- Years 3–5: Annually (or more frequently if high demand or breach history warrants)
- After five consecutive years with no documented breaches: Transition to long-term stewardship

Routes with a High Risk of Reopening
During the first 2–8 weeks, consider more frequent trailhead checks (as staffing allows) because this is the most likely period for attempted reopenings.

Standard Monitoring Sequence
A standard schedule may be implemented as follows (adjust as needed):

Quality Control Check

- Final Inspection and Documentation: conducted within days after physical work is complete

Survey 1 (post-closure baseline)

- Survey 1: 2–8 weeks after closure — On-the-ground + Desktop + Drone

  (Establishes the post-closure baseline condition and captures early reopenings.)

Years 0–2 (first two years): every six months

- Survey 2: 6 months after Survey 1 — On-the-ground + Desktop
- Survey 3: 12 months after Survey 1 — On-the-ground + Desktop + Drone
- Survey 4: 18 months after Survey 1 — On-the-ground + Desktop
- Survey 5: 24 months after Survey 1 — On-the-ground + Desktop + Drone

Years 3–5: annually (or more frequently if warranted)

- Survey 6 (Year 3): 36 months after Survey 1 — On-the-ground + Desktop + Drone
- Survey 7 (Year 4): 48 months after Survey 1 — On-the-ground + Desktop + Drone
- Survey 8 (Year 5): 60 months after Survey 1 — On-the-ground + Desktop + Drone

After five consecutive years with no documented breaches:

- Transition to long-term stewardship (opportunistic checks during routine patrols + periodic desktop review as appropriate)

Routes with a high risk of reopening / breach history (override):

Increase frequency during the first 2–8 weeks and/or insert additional On-the-ground + Desktop checks between scheduled surveys. If a major breach occurs, reset the sequence as a new closure (including a new Survey 1 at 2–8 weeks post-response).

Administrative Standard
The Trails and Mapping Administrator maintains calendar reminders and coordinates with the Park Supervising Ranger to assign (1) the Closure Monitor, (2) the desktop review, and (3) drone support in advance of each survey.

9.4. Enforcement and Ranger Monitoring

When staffing allows, OC Park Rangers should periodically monitor unauthorized trailheads, closure points, and other key access locations for signs of reentry or renewed use. Monitoring assignments may be coordinated by the Supervising Park Ranger, who may designate specific trail entries, vantage points, or patrol areas for periodic inspection based on site conditions, known use patterns, and available staffing.

When reports of reentry or active trail rebuilding are received, Rangers should respond as promptly as practicable, particularly when activity is occurring in real time. For high-demand routes or locations with a history of repeated breaches, the use of monitoring cameras may be appropriate where feasible and consistent with applicable policy. When cameras are installed, Rangers may be responsible for reviewing footage, monitoring activity, and coordinating field response as appropriate.

If Rangers encounter individuals actively reestablishing an unauthorized trail, they may determine whether enforcement action, including citation, is warranted based on the circumstances. In especially sensitive locations, including areas involving protected species, regulated habitat, or other resource concerns, Rangers may also coordinate with additional agencies or authorities, such as the U.S. Fish and Wildlife Service or the California Department of Fish and Wildlife, when appropriate.

9.5. Criteria for Determining Functional Closure

A route may be considered functionally closed when it successfully deters use and supports recovery. Indicators include:

- No major breach attempts for five consecutive years
- The trail scar is not readily apparent to casual observers (visible only to those specifically searching)
- Entry points blend into surrounding habitat with no obvious line-of-travel
- Vegetation recovery is evident at former entry points and along the former corridor
- Desktop indicators show no meaningful sign of renewed use (recognizing the method's limitations)

9.6. Documentation Procedures

On-the-ground monitoring

Monitoring data is recorded through the mobile survey and feeds the OC Parks Unauthorized Trail GIS Database.

The Trails and Mapping Administrator verifies that the submission processed correctly and that key fields (status, breaches, notes, photos) are captured.

9.6.1. Drone Imagery

Imagery is uploaded and linked to the closure record in GIS, using consistent naming conventions and dates for comparison.

9.6.2. Desktop Monitoring

Desktop findings are recorded in the OC Parks Unauthorized Trail GIS Database using the same use-level categories applied during baseline data collection (see Section 2: Baseline Data Collection).

9.7. Rapid Response to Breaches

If a breach is detected, whether through monitoring or an external report, action should occur promptly. Each day a breach remains unaddressed increases the likelihood of further dismantling, renewed tread definition, and escalating impacts.

Where feasible, closure contracts should include monitoring and rapid response to ensure breaches can be addressed quickly. If rapid response is not part of a contract scope, the Trails and Mapping Administrator and Park Supervising Ranger should coordinate to secure an available crew, use in-house resources, or utilize an existing standing contract where possible. Volunteer support may be appropriate for minor breaches in low-sensitivity areas, consistent with park policy and resource constraints.

9.7.1. Response Approach

- Use the original closure methods as a baseline, but strengthen the response based on observed failure points
- Emphasize the methods that proved most resistant to removal and expand closure intensity where appropriate
- Consider additional measures at access points (including fencing where consistent with the closure plan and site constraints)

9.7.2. Resetting The Monitoring Schedule

- Major breach (significant obstruction removal, tread reestablished, or new route created): reset monitoring as though it were a new closure, including a new Survey 1 at 2–8 weeks post-response
- Minor breach (limited disturbance, quickly corrected): maintain the existing schedule but add an extra on-the-ground visit 2–8 weeks after the response

9.8. Transition to Long-Term Stewardship

After a route is deemed functionally closed, scheduled monitoring may end, but the location should remain part of institutional knowledge and be retained in the OC Parks Unauthorized Trail GIS Database. Long-term stewardship consists of:

- Opportunistic observation during routine patrols
- Periodic desktop review of activity indicators
- Awareness during onboarding of new staff in parks with recurring unauthorized trail issues, including both open and previously closed routes

Over longer time horizons (often beyond five years), vegetation density and soil microtopography may recover to the point that the former tread is no more likely to reappear than any other location experiencing new unauthorized trail creation. At that stage, the management posture shifts from monitoring a known closure to general unauthorized trail vigilance within the park unit.

Figure 30: Cactus after one growing season on a formerly used tread that is beginning to revegetate.

Valido Trail, Aliso and Wood Canyons Wilderness Park

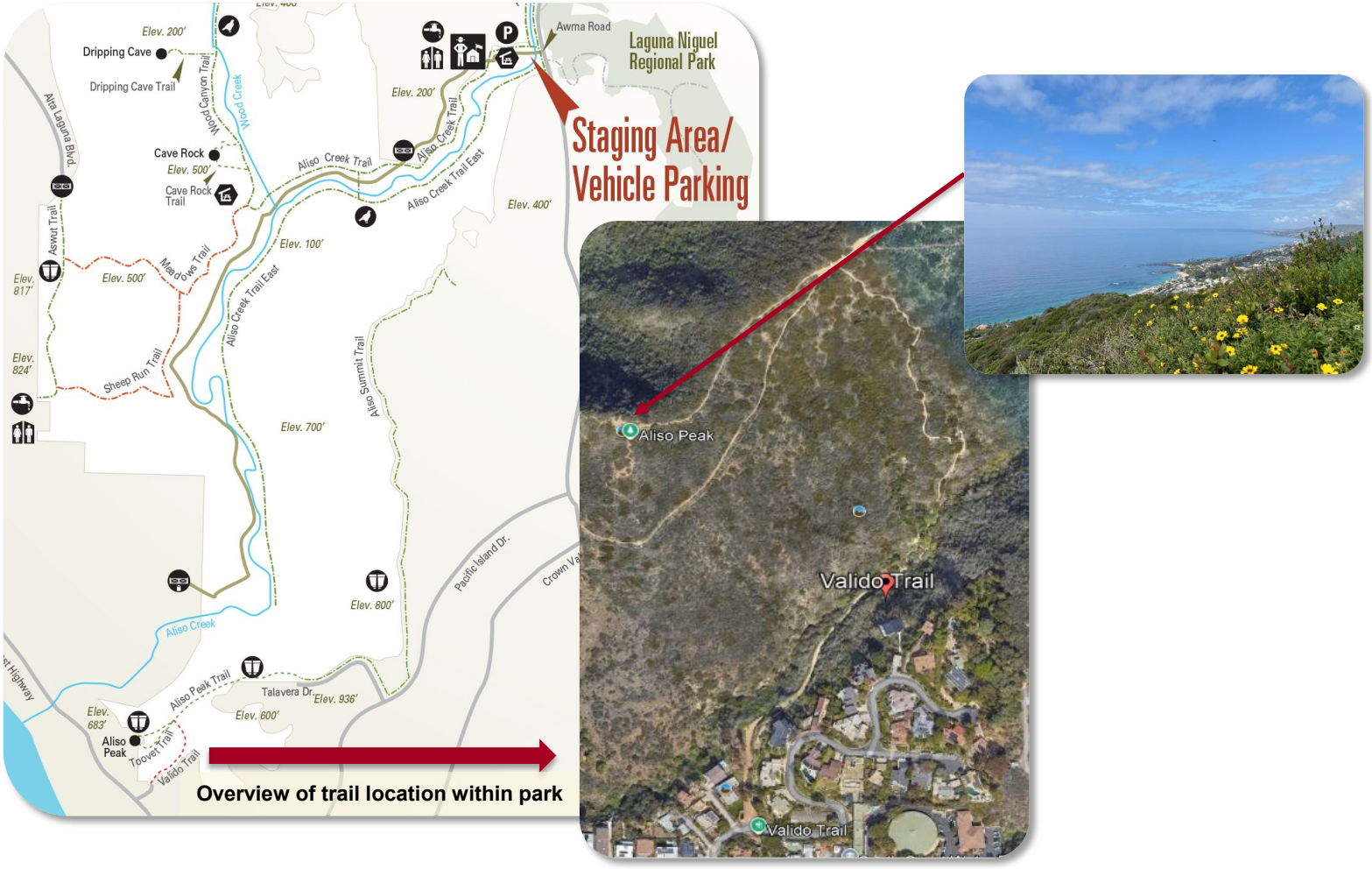
Valido Trail Repair Project

Aliso and Wood Canyons Wilderness Park

Trails Subcommittee – April 9, 2026

Project Location & Context

Location



Site Context & Constraints

Site Conditions

- Cutslope trail configuration
- Downslope drainage gully
- Steep upslope with adjacent residential area
- Adjacent sensitive habitat
- Presence of big-leaved crownbeard (*Verbesina dissita*)

Big-leaved crownbeard (Ron Vanderhoff, iNaturalist)

Valido Trail

Project Purpose


Project area

Why Is the Project Needed

- ~65 feet of trail experiencing ongoing erosion
- Trail width below 4-foot minimum standard
- Slope instability adjacent to creek
- Continued degradation expected without intervention

Goals

- Restore trail to minimum 4-foot width
- Stabilize slope to prevent continued erosion
- Maintain sustainable long-term public access
- Protect adjacent habitat and sensitive species

Project Design Approach

BioWall® System

- ~65 feet long, ~7 feet tall
- Reestablishes trail width and stabilizes slope
- Bioengineered solution designed for long-term stability and habitat integration

Includes:

- Geosynthetic fabric and granular backfill
- Soil-filled bags supporting native vegetation
- Micropiles and soil nails for structural support

Example of BioWall® System for road protection
(geostabilization.com)

Environmental Considerations

Resource Protection Measures

- Work largely within existing disturbed trail corridor
- Limited footprint:
  - ~0.003 acre trail impact
  - ~0.01 acre slope impact
- Bioengineered approach supports revegetation with native plant species
- Best Management Practices (BMPs) will be implemented to avoid and protect crownbeard population
- Regulatory coordination completed (United States Fish and Wildlife Service, California Department of Fish and Wildlife, CEQA exemption)

Big-leaf crownbeard near trail

Project Status & Next Steps


Project area

Status

- Project initiated January 2025
- Included in Fiscal Year 2025–27 Capital Improvement Project List
- Pre-design ~90% complete
- Design underway

Next Steps

- Finalize design and environmental review
- Confirm permitting
- Bid and award construction
- Construction and restoration

Summary

Key Takeaways

- Targeted repair of a compromised trail segment
- Addresses ongoing erosion and safety concerns
- Designed for long-term stability
- Minimizes impacts to adjacent habitat and sensitive species
- Supports continued public access and resource protection

Valido Trail

Questions

Aliso Peak Views