Oregon
Kate Brown, Governor

Department of Fish and Wildlife
Prineville Field Office
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2042 SE Paulina Hwy.
Prineville, OR 97754
(541) 447-5111
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www.dfw.state.or.us

December 19, 2022

Slater Turner, District Ranger
Lookout Mountain Ranger District
Ochoco National Forest
3160 NE Third Street
Prineville, OR 97754

RE: EA – Lemon Gulch Trail System Project

Dear Ranger Turner,

The Oregon Department of Fish and Wildlife (ODFW) appreciates the opportunity to provide comments on the Lemon Gulch Trail System Project (Project). The Project, depending on the alternative selected, would create up to 52 miles of new shared biking and hiking routes approximately 15 miles northeast of Prineville. It is the policy of the State to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations (ORS 496.012). In accordance with this policy and ODFW's mission, we have reviewed the draft EA and provide the following comments and recommendations to be included in the comment record.

Background:

The planning for the Project has been ongoing since 2019, and ODFW biologists have participated in Ochoco Trails (OT) meetings and offered input throughout the Project planning process. ODFW reviewed the Ochoco Trails proposal (2019) and provided four main recommendations to siting non-motorized trails in the Ochoco National Forest (Forest):

- Recommended limiting new non-motorized trail development in the Ochoco National Forest to already impacted habitat to avoid further fragmentation.
- Avoid additional impacts to ungulate summer range habitats.
- ODFW recommended that the OT and the Forest begin to monitor current trail use on existing trails to establish baseline data.
- ODFW recommended bridges on creek crossings to minimize negative impacts to trout.

ODFW strongly supports the Forest in not expanding trails in the Potlid Trail Complex, and the Scotty Creek/ Cougar Creek Trail Complex. ODFW is also very supportive of not seeking trail expansion in the Lookout Mt. area (Brush Creek) and the Hammer Creek area in the Maury Mountains.

To assist the reader in interpreting the EA, it would be helpful to add:

- Sediment Transport model to show current versus potential sediment input into the stream
- Maps of each alternative that show stream class, RHCA categories, stream crossings, and trail locations

ODFW offers the following comments on the EA:

Riparian Habitat:

This project as described in the Hydrology and Aquatic Species section shows there will be adverse impacts to Redband trout which is contradictory to the management objectives of INFISH and the Conservation Strategy for Interior Redband in the States of California, Idaho, Montana, Nevada, Oregon and Washington (Conservation Strategy). The purpose of INFISH is to "provide interim direction for the protection of habitat and populations of resident native fish outside of anadromous fish habitat…" and the goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Part of the interim direction to protect habitat and native fish populations was the development of Riparian Habitat Conservation Areas (RHCAs), which are portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to standards and guidelines. The applicable standard and guideline for Recreation Management (RM-1) states to design, construct, and operate recreation facilities, including trails and dispersed sites, in a manner that does not retard or prevent attainment of the Riparian Management Objectives and avoids adverse effects on inland native fish.

The Lemon Gulch Draft EA describes the existing watershed conditions for riparian/wetland vegetation condition as fair and aquatic habitat condition as poor. The indicators in this analysis include pool quantity and quality, riparian shade, and sediment delivery to the stream. Pool quality was described as, "falls well short of meeting management objectives" and that the overall trend was a decrease in the number of pools per mile. Pool quality was described as generally shallow and exhibiting little habitat complexity with no improvement in pool depth over time. Riparian shade across the entire watershed was described as below Forest Plan standards but was improving over time. However, the data provided for Lemon Creek indicated a decreasing trend in 2 out of 3 sites and the third only had one year of data so trend isn't determined. Sediment delivery to the stream was evaluated by assessing the percent of stable banks and the percent of fine sediments in the channel substrate. Percent stable banks in the Mill Creek watershed was described as stable except for a few reaches. Those few reaches include 2 of the 3 reaches in Lemon Creek where trend can be determined. The lowest 2 reaches in Lemon Creek are below Forest Plan standards for percent stable banks and are trending downward. Percent of fine sediment in the channel substrate was described as an increasing trend throughout the entire Mill Creek watershed. Very large increases were observed in reach 1 of Lemon Creek and percent fines are exceeding desired levels in 3 of the 4 reaches. As stated in the draft EA, "Percent fines observed correlate closely with the trends in percent stable banks supporting a decrease in overall channel stability, increase in erosion and deposition, and decrease in aquatic habitat quality (93)." USFS research has determined that fine sediment in excess of 20% adversely affects Redband trout spawning and fry emergence. One reach in Lemon Creek is just under 20%, 2 other sites are approximately 30% and the lowest reach, where most of the spawning and rearing habitat is located, is approximately 55% with an overall trend of an increase in percent fines. It would have been helpful for the reader if sediment transport data and modeling was provided in the draft EA to show how Best Management Practices (BMPs) would minimize fine sediment transport from this proposed project. When evaluating the effects common to all action alternatives, it appears sediment input was only considered from trail construction at stream crossings but did not consider over land run-off from trails built within RHCAs. While BMPs can minimize the amount of fine sediment introduced to Lemon Creek from this project, they will not be eliminated. Any addition of more fine sediment from this proposed project will continue to adversely impact Redband trout and their habitat by speeding up the filling of pools and spawning gravels, which will prevent the attainment of Riparian Management Objectives. The degraded conditions and overall downward trends described in the draft EA demonstrate that Lemon Creek is not recovering, and the introduction of additional fine sediment will further retard the natural rate of recovery.

ODFW does not agree with the determination that the project will not change the baseline conditions for Redband trout regarding subpopulation size and characteristics. The Mill Creek watershed, which includes the Lemon Creek tributary, is a small, low-elevation watershed that is characterized by low precipitation and has been severely degraded over time. Through habitat degradation and water withdrawals, the Redband trout population in Mill Creek has become severely depressed. Lemon Creek has been exhibiting more of an intermittent nature and will only continue to get worse with climate change predictions shifting the precipitation from snow to rain. The degraded riparian and instream habitat doesn't allow the creek to hold water as long in the year as it used to. Additional fine sediment inputs will further exacerbate the situation by filling in pools, causing the stream to drain even earlier in the year.

ODFW sampling data indicates Lemon Creek is used for spawning and rearing by Redband trout. Continued filling of pools and spawning gravels with fine sediment will lead to a reduction in spawning and rearing habitat. If the creek goes dry sooner in the year, that could potentially lead to stranding of trout redds or fry and eventually local extirpation. The draft EA concludes that habitat for Redband trout is still available in adequate amounts, distribution, and quality to maintain Redband trout viability on the Ochoco National Forest and Crooked River National Grassland. It is true that there is enough available habitat on the entire Ochoco National Forest to preclude listing or cause the loss of the species, but the Mill Creek watershed is small and not well connected to the rest of the forest so that habitat is not available to the Mill Creek subpopulation of Redband trout. In addition, much of the habitat on the rest of the forest is in a degraded state and can't support robust populations of Redband trout. The draft EA states, "because of poor water quality and habitat conditions, Redband trout and Columbia spotted frogs would continue to have depressed growth rates, depressed spawning and rearing survival rates, and depressed population densities at the project and Forest-scale (98)." Stuart et al. 1996 estimated that Redband trout occupy 75% of their historic range in the Crooked River basin, but their abundance is a fraction of historic levels. Strong populations of Redband trout are only found in 7% of the basin. The Conservation Strategy estimates that Redband trout inhabit approximately 42% of their historic habitat range wide. As signatories of the Conservation Strategy, the USFS has committed to assuring the long-term persistence of Redband trout within their historical range at sustainable levels. Specific action items include securing and enhancing the distribution and abundance of all core and other populations of Redband trout throughout their historical range; maintain, protect, and/or improve aquatic and riparian habitat and species assemblages associated with Redband trout populations through efforts to enhance aquatic habitats, improve ecosystem health, and minimize land use impacts to Redband trout habitat; and expand Redband trout distribution within the broad boundary of the historical range through expansion of some populations and restoration and/or reintroduction of other populations.

In summary, the draft EA describes a degraded stream system that is not currently meeting Riparian Management Objectives as described in INFISH and is continuing to degrade. The construction of trails within RHCAs will add to the existing adverse effects to Redband trout and will speed up the rate of degradation, which will further retard the natural rate of recovery of Lemon Creek. The LRMP states that a long-term Forest objective is to maintain or improve all riparian areas to "excellent condition" (Water pg 4-35). To avoid adverse effects to Redband trout, not retard the natural rate of recovery of Lemon Creek, and to remain consistent with INFISH standards and guidelines and the Conservation Strategy, ODFW requests that no trails be built within RHCAs, especially category 1 and 2.

Regarding riparian habitat impacts, ODFW has the following comments:

- Eliminate trail construction within RHCAs, especially category 1 and 2.
- Minimize number of stream crossings, combine those within close proximity to each other and eliminate crossings in spawning areas.
- Use bridges in areas where trails cross Lemon Creek.

Wildlife Habitat:

ODFW acknowledges that the Forest Services preferred alternative (Alternative 6) as an attempt to minimize resource impacts and a modest improvement over the original proposed action. However, Alternative 6 will continue to result in negative impacts on watersheds, fish, and wildlife within the Project Area. ODFW recommends the retention and maximization of cover in elk security areas. Alternative 6 will have more adverse effects to elk security, with a core habitat reduction of 527 acres, in addition to smaller blocks of core habitat that would increase fragmentation. ODFW supports Alternative 3 modified with the following recommendations:

- Relocate the trail to the east side of the 3360 road to avoid the RHCAs (Use Trails 5.5, 13.4, 9.2, and 13.3 instead of 1.4, 22.4, 9.0, 22.3, 22.2, 22.1, 21.0, 21.1, and 20.1).
- Utilize bridges for crossings, reduce the number of crossings, and avoid spawning areas.
- Seasonally close roads and trails December 1 to May 1 to motorized and non-motorized vehicle traffic (e.g., mountain bikes).

- Implement and enforce seasonal no-dog restrictions.

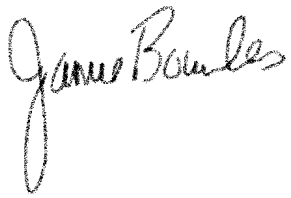
Monitoring:

- ODFW supports phased implementation and monitoring (Appendix C) and would recommend specific triggers be included that will specify when additional aspects of the trail system will or will not be constructed.
    - ODFW recommends trail monitoring on non-motorized Forest trails to obtain baseline use data (ODFW pilot monitoring project attached).

- Include turbidity and sediment monitoring to evaluate trail impacts (sediment transport models) to the monitoring plan.

Thank you for the opportunity to comment. Please contact me if you have questions or to request further information regarding these recommendations.

Sincerely,



Jamie Bowles
Wildlife Habitat Biologist
Deschutes Watershed District
jamie.l.bowles@odfw.oregon.gov
541-388-6147

cc: Nick Myatt – ODFW East Region Manager
Corey Heath – ODFW Deschutes Watershed Manager
Greg Jackle – ODFW Ochoco District Wildlife Biologist

ODFW TRAIL MONITORING PILOT STUDY

The Oregon Department of Fish and Wildlife (ODFW) deployed two paired trail counters during summer of 2021. The below information is unpublished data from that monitoring effort. This pilot study was for a short period of time and to identify challenges and opportunities for monitoring human recreation on the Forest.

ODFW deployed one Trafx infrared trail counter and one Trafx Mountain Bike Counter at the same location near the bottom of the Lookout Moutain Trail #804 (just up the trail from the Lower Lookout Mt. Trailhead). The data collected is the results from leaving these counters in place for 60 days.

The graph "Daily Totals" displays the number of encounters with the infrared trail counter or the bike counter on the y axis and the date on the x axis. The next form is the raw data illustrating daily totals for each counter. This form also highlights the weekend days and the opening days of two major hunting seasons that occurred during this time period. As an example on 8/28/2021 (Saturday) archery elk and deer season opened and this resulted in 8 bike encounters and 30 hike/bike encounters. It should be hypothesized that humans hiking on this section of trail will likely walk the trail back and break the infrared beam later in the day, and thus appropriate to divide the daily number by 2. It is not known if bike use on this trail is primarily from bikes riding down hill and thus will only trip the counter one time, or similar to how hikers use this section of trail. The last page has the raw data broken down by hour on 8/28/21.

Lookout Mountain Trails

- Summer Non Motorized Trails
- Hiker Only Trail
- ATV Trails
- Forest Service Land
- Private Land
- National Forest Wilderness
- BLM Land
- State Land
- Trailheads
- Campgrounds
- Horse Campground

N

0 0.5 1 2 Miles

Contour Lines are at 100 ft. intervals

GPSCoordinate Grid: Latitude, Longitude, WGS84

Map updated by Steve Hayden July 2011 for USFS

In case of medical emergencies, search and rescue, or state and county law enforcement emergencies call 911

For non-emergency Crook County and USFS Law enforcement call (541)447-6398

Mountain Bikers
Give right of way to uphill riders when going downhill and give right of way to horses at all times.

Walton Lake Trail #809

Walton Lake

Walton Lake

Round Mountain North

Lower Lookout Mountain

Ochoco Forest Camp/Pavilion

Round Mountain Trail #805

Round Mountain

O 'Neil Butte

Duncan Butte

Crooked Tree Spring

Lookout Mountain Trail #804

Round Mountain South

Upper Lookout Mountain

Mother Lode Mine

Independent Mine

Mother Lode Mine

North Point

Baneberry Trail #812

Mother Lode Mine Trail #808A

Lookout Mountain Trail #804

Independent Mine Trail #808

Howard Butte

Line Butte Tie #807A

South Point

Chew Spr

Little Spr

Buck Spr

Line Butte Tr #807

Line Butte West

Line Butte East

Trail Courtesy
YIELD TO

The Forest Servicce cannot assure the reliability or suitability of this information for any particular purpose. Original data elements were compiled from various sources. Spatial information may not meet National Map Accuracy standards. This information may be updated, corrected, or otherwise modified without notification.
For additional information abouth this data, contact the Ochoco National Forest at 541-416-6500.

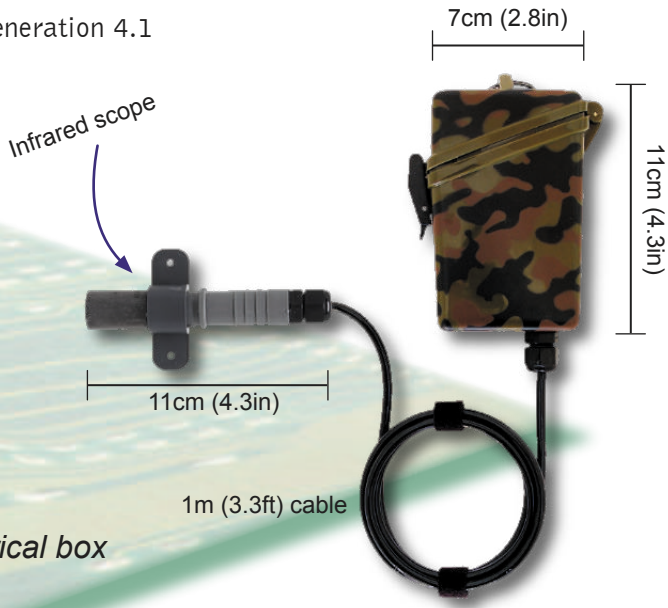
For Ochoco National Forest recreation information call (541)416-6500 M-F 8AM - 4:30PM or check the website www.fs.fed.us/r6/centraloregon

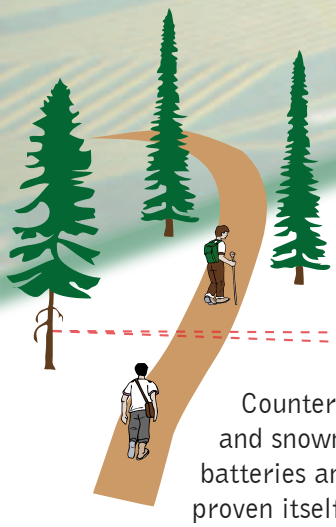
INFRARED TRAIL COUNTER

Generation 4.1

Key Info

- *Counts people on trails, paths and sidewalks*
- *Advanced microelectronic design*
- *High-quality infrared scope*
- *Compact, unobtrusive, camouflaged design*
- *Very long battery life (up to 10 years)*
- *Large storage capacity (millions of counts)*
- *Maximum range: 6m (20ft.)*
- *Built for outside: -40C (-40F) to +55C (131F)*
- *Very low operating costs (<$1/year for batteries)*
- *Mount on a tree, or put inside a low-cost, lockable electrical box*
- *Field-proven, Generation 4 design (>10 year history)*
- *Used from Alaska to Australia, in remote and urban areas*



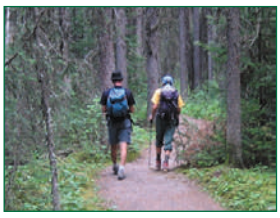


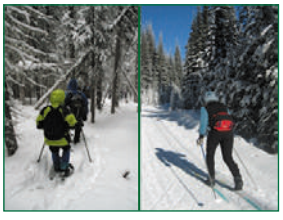
Unique Design

The TRAFx Infrared Trail Counter counts people — walkers, hikers, joggers, inline skaters, horseback riders, cyclists, etc. — on trails, paths and sidewalks. It senses and detects the infrared wavelength that people emit. Unlike other trail counters, it does not require a receiving unit or reflector to operate. This results in a very compact, unobtrusive design, that reduces risk of vandalism. The TRAFx Infrared Trail Counter also works well in winter conditions on snowshoe, ski and snowmobile trails. It uses three standard "AA size" alkaline batteries and has very long battery life. This versatile counter has proven itself from Alaska to Australia, from mountains to deserts, and from wilderness areas to urban areas. You can count on it :-)

Flexible Installation

Mount the infrared (IR) scope on a tree and hide the camouflaged case around the back. Or, in busy, open areas (e.g., urban parks), put it inside a low-cost, lockable electrical box attached to a post. Or, fully embed it in a post. Its small, high-quality IR scope can be pointed horizontal, or downwards.



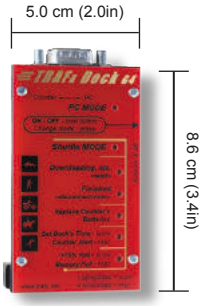


TRAFx Counting System

TRAFx Dock

To download counters in the field (without PC)

To configure counters (with PC)



TRAFx DataNet

To view and manage your data

To produce professional reports in seconds.

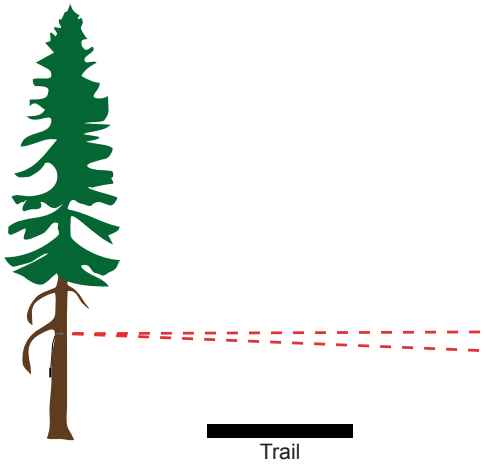
Try the free Demo at www.trafx.net

Installation Options

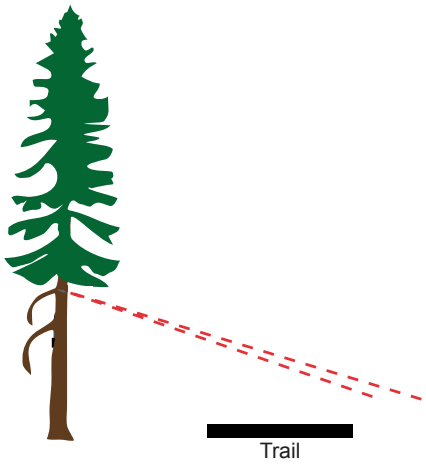
INFRARED TRAIL COUNTER

Generation 4.1

POINT ACROSS



POINT DOWN



FEATURES

- Hourly or daily totals, or timestamps
  - -14 000 hourly or daily totals = > 400 million counts
  - -14 000 timestamps
- Flexible installation options (see above)
- User programmable settings including:
  - *Real-time clock *Start date/time
  - *Delay after event *Site/counter name
- Three colour-coded LEDs indicate status of operation
  - -green light flashes upon detection
- Digital readout of battery voltage level (e.g., 4.2V)
- Automatic low battery warning
- User replaceable parts
- Engineered and built in the Canadian Rockies

Appendix 1 in the counter's instruction document explains how to house the counter in a low-cost ($15), lockable electrical box.
Download at:
www.trafx.net/support

SPECIFICATIONS

CASE: 11cm x 7cm x 4cm (4.3in x 2.8in x 1.5in); weatherproof
TOTAL WEIGHT: 170g (6oz) (without batteries)
CABLE: 1m (3.3ft)
POWER: Three "AA size" alkaline batteries (e.g., Energizer)
BATTERY LIFE: Approx. 9 to 10 years
DIGITAL MEMORY DESIGN: Data and settings are retained even when batteries are removed or die
TIME KEEPING: Quartz clock; 10ppm accuracy @ 20C
OPERATING TEMPERATURE: -40C (-40F) to +55C (131F)
SENSOR TYPE: Thermal infrared microsensor
DETECTION RANGE: 6m (20ft)
COMMUNICATIONS: RS232 serial; 115,000 baud
DATA TYPE: ASCII; .txt file type
OTHER: Gold-plated circuitboard; 2-layers silicon (anti-moisture); ESD and short circuit protection; RoHS (lead-free)
LIMITED WARRANTY: 1 year; covers manufacturing defects.
EMI COMPLIANCE: FCC, IC, CE

ACCESSORIES/OPTIONS

- LCD tally display
- Extended 5-year warranty

TRAFx Research Ltd.
20 MacDonald Place, Canmore, Alberta, Canada T1W 2N1
T: (403) 678 1802 F: (403) 451-1561
E: info@trafx.net www.trafx.net

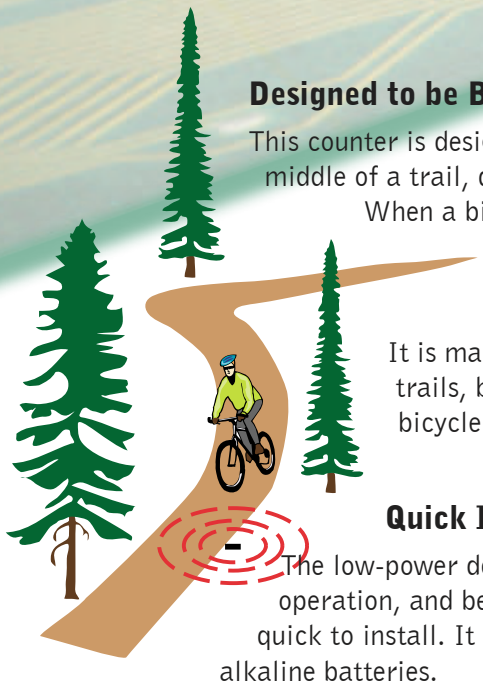
Jul 2019

MOUNTAIN BIKE COUNTER

Generation 4.1

Key Info

- *Optimized to detect and count bicycles on trails*
- *Advanced microelectronic design*
- *Self-contained design; no external wires or tubes*
- *Designed to be buried*
- *Small and easy to hide — reduces vandalism risk*
- *Long battery life (up to 9 months)*
- *Large storage capacity (millions of counts)*
- *Built for outside: -40C (-40F) to +55C (131F)*
- *Low installation, operating, and maintenance costs*
- *Field-proven, Generation 4 design (>10 year history)*



Designed to be Buried

This counter is designed to be buried beside or in the middle of a trail, depending upon the trail's width. When a bike passes, an aerospace-quality magnetometer coupled with advanced embedded processing software, detects and records a count. It is mainly intended for mountain bike trails, but can also be installed on regular bicycle paths under 2m (6.6ft) wide.

Quick Installation

The low-power design ensures battery efficient operation, and because it is small, this counter is quick to install. It uses three standard "C size" alkaline batteries.

TRAFx Counting System

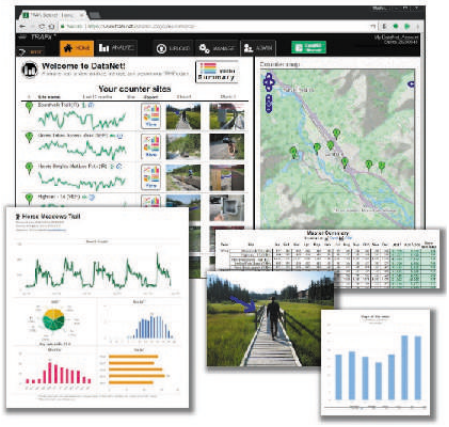
TRAFx Dock

To download counters in the field (without PC)

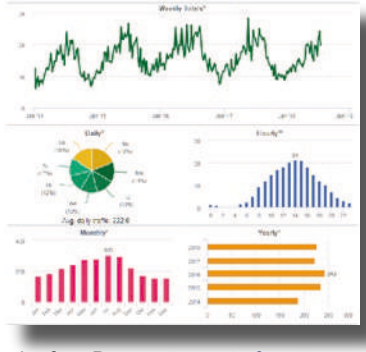
To configure counters (with PC)

TRAFx DataNet

To view and manage your data



To produce professional reports in seconds.



Try the free Demo at www.trafx.net

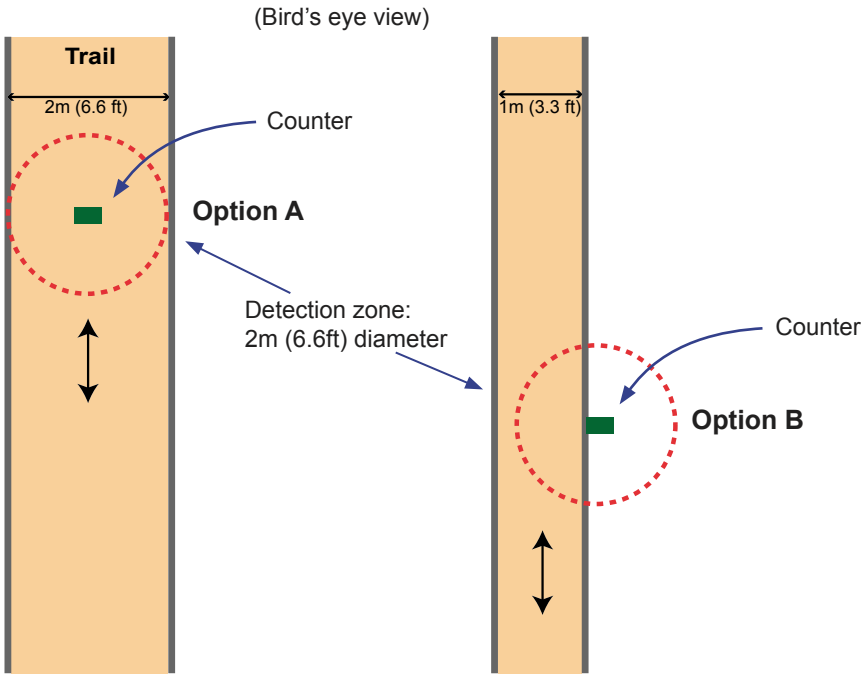





Installation Options

MOUNTAIN BIKE COUNTER

Generation 4.1



OPTION A

- install mid-trail

OPTION B

- install trailside

FEATURES

- Hourly or daily totals, or timestamps
  - -14 000 hourly or daily totals = > 400 million counts
  - -14 000 timestamps
- Flexible installation options (see above)
- Proprietary design for detecting bicycles
- User programmable modes/settings
  - -Programmable settings include:
    - *Real-time clock *Start date/time
    - *Detection range *Digital sampling parameters
    - *Delay after event *Site/counter name
- Three colour-coded LEDs indicate status of operation
  - -green light flashes upon detection
- Digital readout of battery voltage level (e.g., 4.2V)
- Automatic low battery warning
- User replaceable parts
- Engineered and built in the Canadian Rockies

SPECIFICATIONS

CASE: 14cm x 10.5cm x 5cm (5.5in x 4.1in x 2in); weatherproof
WEIGHT: 250g (8.8oz) (without batteries)
POWER: Three "C size" alkaline batteries (e.g., Energizer)
BATTERY LIFE: 8 to 9 months max. with three C alkalines
20 months max. with one D lithium (custom.)
DETECTION RANGE: 2m (6.6ft); see diagrams above
DATA TYPE: ASCII; .txt file type
DIGITAL MEMORY DESIGN: Data and settings are retained even when batteries are replaced or die
TIME KEEPING: Quartz clock; 10ppm accuracy @ 20C
OPERATING TEMPERATURE: -40C (-40F) to +55C (131F)
SENSOR TYPE: Low-field geomagnetic
COMMUNICATIONS: RS232 serial; 115,000 baud
OTHER: Gold-plated circuitboard; two coats silicon (anti-moisture); ESD protection and short circuit protection; RoHS (lead-free)
LIMITED WARRANTY: 1 year; covers manufacturing defects.
EMI COMPLIANCE: FCC, IC, CE

"3-in-1 design!"

TRAFX VERSATILITY

The TRAFx Mountain Bike Counter comes pre-programmed and ready to use as the TRAFx OHV Counter or the TRAFx Vehicle Counter, at no extra charge. Simply change the mode when configuring the counter.

Also, it can be quickly and easily converted to the TRAFx Infrared Trail Counter by ordering a special conversion kit.

Visit www.trafx.net for details

ACCESSORIES/OPTIONS

- LCD tally display
- IR conversion kit
- Extended 5-year warranty

TRAFx Research Ltd.
20 MacDonald Place, Canmore, Alberta, Canada T1W 2N1
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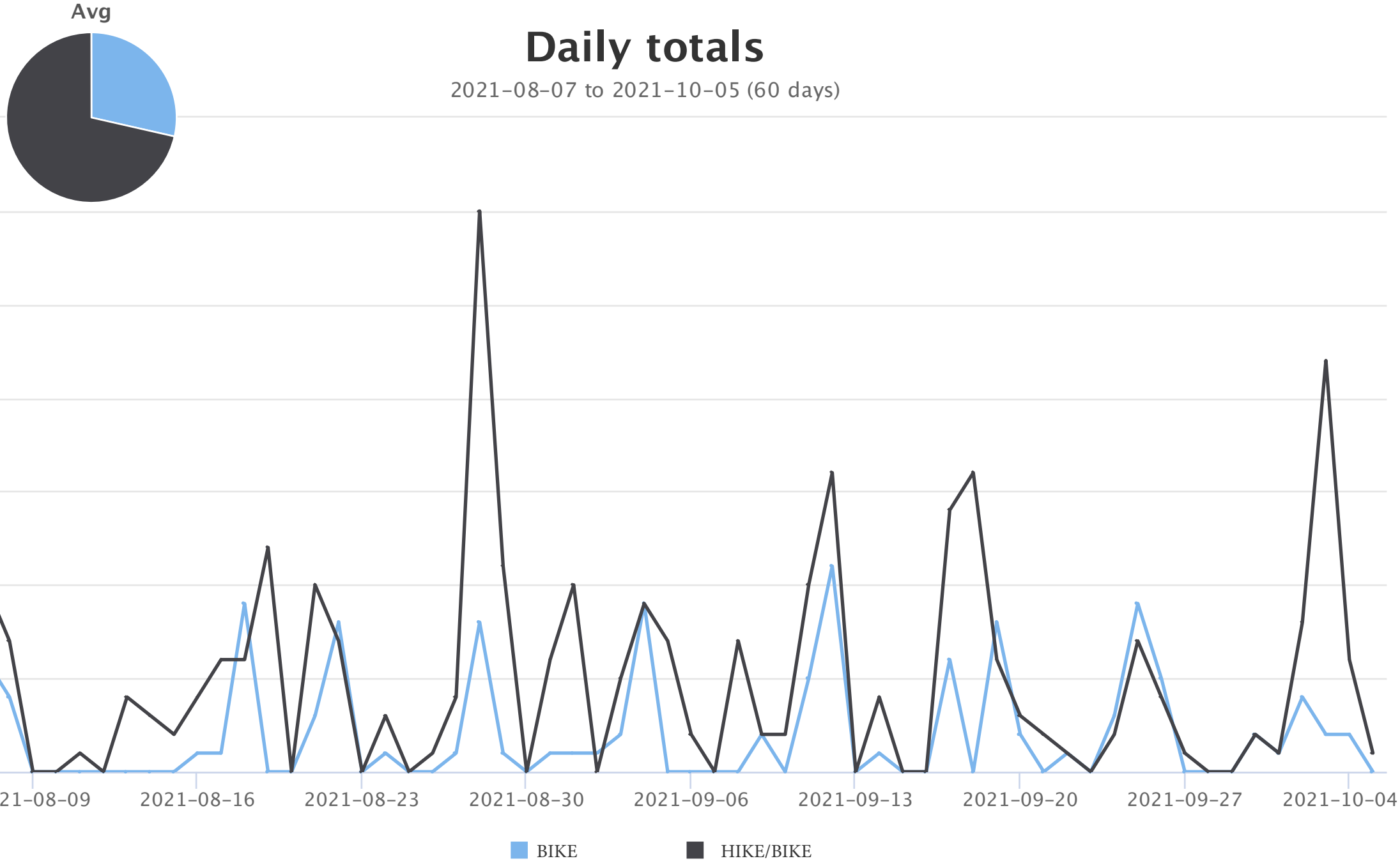
Jul 2019


Avg
Daily totals
2021-08-07 to 2021-10-05 (60 days)
35
30
25
20
15
10
5
0
2021-08-09
2021-08-16
2021-08-23
2021-08-30
2021-09-06
2021-09-13
2021-09-20
2021-09-27
2021-10-04
BIKE
HIKE/BIKE