Weather Safety Kiosks at Wilderness Parks

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The Opportunity:

- Public use of wilderness parks is heavy and increasing (over 300,000 visitors at PDSP in 2016 and 169,000 at GMNP in 2015, with a 9% increase in Texas state park visitation 2009-2014)
- Visitors at the outdoor parks are vulnerable to hazardous weather. Timely weather information can be difficult to access.
 Safe shelter can be hard to come by.
- Wilderness parks provide an excellent setting for weather education.

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Kiosk Planning stage:

- Foster relationships with park management and gain their support
- Identify an unique weather hazard or characteristic of the park, and tailor the presentation of information to it. For our parks, it was wind at GMNP and heat at PDSP.
- Consider how weather information will be acquired. Will you need to purchase/build your own weather station?

It was 112 degrees at the bottom of Palo Duro canyon on July 11, 2016

Form a team with the needed expertise

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Design of the Kiosks:

Hardware

- PC with typical specs. Integrated graphics okay. SSD drive to increase performance
- Touch-screen monitor: price dependent on size
- Display case
- Misc.: UPS, Networking hardware, etc

Software

- Software to manage the kiosk behavior: We use KioWare
- Operating System: We use Windows 7
- Bulk of the kiosk built as a local website, using HTML, to be displayed in a browser. Newer web technologies including HTML5 and CSS3 make modern, aesthetic design easier.

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Cost:

Hardware/software cost:
 I. Computer: \$500-\$1000 (with OS)
 II. Touchscreen: \$500-\$800 (size of monitor)
 III. Display software: \$0-\$100

 Weather station if necessary: \$1000 for base quality (Davis)
 Price can go up quickly with higher quality instrumentation OTHER CONSIDERATIONS: Development cost? Internet access cost? Maintenance cost?

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Kiosk Deployment:

- Coordination with partners:
 Make sure the park is satisfied with the design
- Purchase & assemble equipment:
 May require multiple visits to the park

Program:

-Almost any modern language will work. May already be code available to help

Dedication ceremony:

-Invite media. Try to create public awareness of the kiosk

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for (\$site=0;\$site<=4;\$site++)</pre> \$fh=\$outFile[\$site]; \$fileSegment1 = '<head> <meta http-equiv=\"Content-Type\" content=\"text/html; charset <title>GUMO Kiosk Display</title> <link rel=\"StyleSheet\" href=\"/themes/GMNPtheme.css\" type=\ </head> <body bgcolor=\"#3366FF\" background=\"images/IMG 3466 bg2.gif <div align=\"center\"><font color=\"#333 to the Guadalupe Mountains
 National Park Weather Kiosk</div>

Partnership with the West Texas Mesonet:



West Texas Mesonet sites as of Jan 2017

The site located just east of GMNP

www.mesonet.ttu.edu



- Research grade instrumentation
 - Data is timely, one or five minute updates depending on the station
- Data is quality controlled and robustly maintained
- Data is freely available on the internet, although the format is not optimized for automated processing

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Kiosk 1, Guadalupe Mtns National Park:



- Remote, high-elevation desert environment in southwest Texas
 - Weather-related hazards
 include wind storms,
 wildfires, lightning, heat
 illnesses, and even
 hypothermia on the higher
 peaks

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Kiosk 1, Guadalupe Mtns National Park:



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Some lessons learned from Kiosk 1:



- Website links change/break periodically. These can be difficult to monitor and repair remotely.
- Computer-related issues can be difficult to resolve. OS updates and changes in the network configuration were two issues that we encountered. In the case of GMNP, the only dedicated IT person was based in nearly Carlsbad Caverns NP.

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Kiosk 2, Palo Duro Canyon State Park:



- Deployed in the Spring of 2016
- Located in the Texas Panhandle. Not as remote as GMNP, but cell service can still be unreliable in portions of the park
- Weather-related hazards include heat illnesses, lightning, flooding, wildfires

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Kiosk 2, Palo Duro Canyon State Park:

Prominent access to current temperatures at top and bottom of the Canyon

NWS Hazard information for the park



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Summary/Keys to Success

- Live weather data is the foundation. It provides visitors and Park employees awareness of weather hazards and keep the kiosk from becoming stale.
- Close coordination with partners
- Budgeting/planning for ongoing maintenance and upkeep
- Using high-quality, durable equipment

The bottom line

Weather kiosk at Palo Duro Canyon Park seeks visitor safety



Report rights infringemen

Officials are hoping installation of a kiosk providing real-time weather and forecasts for both the floor and the rim of Palo Duro Canyon will trim the number of people experiencing heat-related issues at one of Texas' most popular and

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