



## Case Study

### STANFORD UNIVERSITY JASPER RIDGE BIOLOGICAL PRESERVE



#### BridgeWave Enables Campus-Wide Connectivity for Researchers at Stanford University's Jasper Ridge Biological Preserve



Housed on more than 1,189 acres, Stanford University's Jasper Ridge Biological Preserve (JRBP) contributes to the understanding of the Earth's natural systems through research, education and protection of the preserve's resources for researchers from around the globe. A refuge to native plants and animals, JRBP has been used for scientific studies since the opening of Stanford University in 1885. Since then, 165 dissertations have been written based on research from the preserve, 335 publications

have reported findings from JRBP and students have submitted more than 400 papers from studies conducted at the preserve.

JRBP utilizes wireless data collection instrumentation throughout the preserve, which are connected to the preserve's mesh network. However, the existing connectivity from the mesh network to the main campus was not reliable and proved incapable of providing the high bandwidth performance needed to support ongoing research. JRBP relied on servers to back up large files at the site, however the antiquated system was challenging as researchers were forced to transport their files by hand to and from the main campus.



#### THE CHALLENGE

*"We needed a quick and effective way to offer reliable network connectivity to the researchers that utilize this facility. Reliability was a key factor in our decision."*

*Matt Riley  
Director of Information Services,  
School of Humanities and Sciences  
Stanford University Jasper Ridge  
Biological Preserve*

Matt Riley, director of information services, school of humanities and sciences, and his team sought to find an affordable solution that would offer fiber-like capacity, limit the intrusive construction on the preserve and could be easily and quickly deployed.

Since JRBP is a pristine natural area, the university felt it imperative to leave the area undisturbed. Stanford confines human interaction with JRBP as much as possible – including putting limitations related to foot traffic and vehicles on site. Initially, Stanford considered laying fiber from the facility to the preserve; however trenching a fiber line would have long-lasting implications to the delicate ecosystem. Additionally, the investment was cost-prohibitive, both in the initial cost and recurring expenses.



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### THE SOLUTION

*"I did my research so I knew what to expect as far as availability and speed, yet I was still blown away. Not only was the connectivity top notch, but this deployment will save Stanford a considerable amount of money – nearly \$30-40,000 a year in recurring costs," said Riley. "Most importantly, we were able to quickly deploy a wireless network for researchers without disrupting the natural preserve, which is something we were incredibly concerned about."*

Working with Pacific Communications ([www.rsn-paccomm.com](http://www.rsn-paccomm.com)), a San Jose, California-based wireless communications solution provider, BridgeWave's BW80X radios were quickly identified as the best solution for Stanford's needs. The highly scalable, future-proof links were affordable, easy-to-deploy, and provided the fiber-equivalent performance needed to transport the data-intensive research conducted at JPRB.

Additionally, Matt and his team were thrilled that the preserve was left unharmed, without disrupting the grounds by digging trenches for fiber. This was especially crucial as leaving the Preserve's ecosystems in as natural a state as possible allows scientists and students from all over the world to study and observe the refuge in a natural state.

### BENEFITS

Researchers at JPRB previously weren't able to download video or transfer large files, since supporting email and providing access to some of the administrative applications from the main campus was all the network could handle. Upon deployment, the radio performance exceeded Stanford's expectations, and, with more than ample bandwidth for future expansion plans, Stanford is considering centralizing the network to the main campus while also enabling VoIP.

*"The speed really is better than we expected," noted Philippe S. Cohen, Ph.D., administrative director at Jasper Ridge Biological Preserve. "Our network connectivity remains competitive with Stanford's main campus network."*

JRBP researchers are now able to work seamlessly without losing connectivity and with a gigabit backbone connection, the bandwidth issues are no longer a concern. BridgeWave's BW80X radios provide a reliable, high-speed network on par with the fiber solution Stanford had originally explored.

*"BridgeWave's gigabit wireless links have lifted all restrictions and researchers are now able to utilize the network at will. They use it with confidence, and they don't need to worry that their colleague seated in the next office is being impacted by what they're doing," added Riley.*



**BridgeWave**  
COMMUNICATIONS

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**CUSTOMER:** Stanford University's Jasper Ridge Biological Preserve (<http://jrpb.stanford.edu/>)

**INDUSTRY:** Education

**CHALLENGES:**

- Provide network connectivity to a disparate research facility off the main campus without damaging the delicate ecosystem
- Guarantee reliability and performance, while remaining cost-effective
- Meet high bandwidth requirements to backhaul mesh network supporting thousands of data collection points that record data and upload it automatically

**SOLUTION:** BridgeWave BW80X radio

**BENEFITS:**

- "Future-proof" network for upgrades or additions with full-rate gigabit backbone
- Lifted restrictions on traffic types being transported over the network
- Instilled researchers' confidence in the network's ability to effortlessly handle large file transfers
- Significant ROI compared to trenching or leasing fiber circuits



BridgeWave Communications, Inc.  
3350 Thomas Road, Santa Clara, CA 95054  
Ph: 408-567-6900 | Fax: 408-567-0775

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