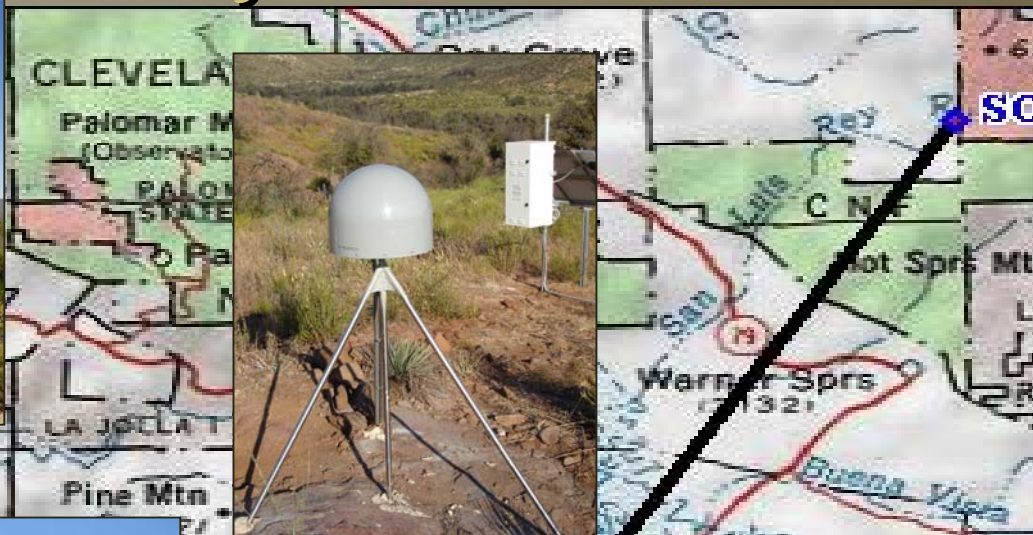# HPWREN Users Meeting 2005 San Diego State University Field Station Programs
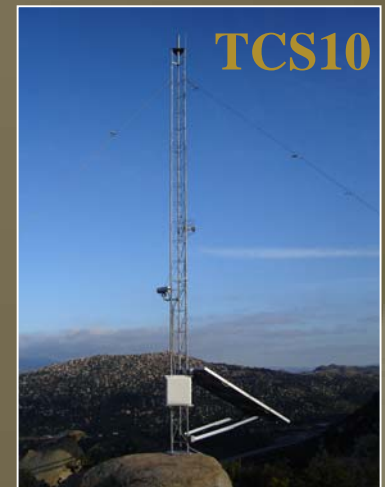
- Sky Oaks Link Established
- Intra-SMER Expansion to Highlands
- Fire Sensor Project
- Web Content
- HPWREN at SDSU
- Intra-SMER Backbone Upgrade
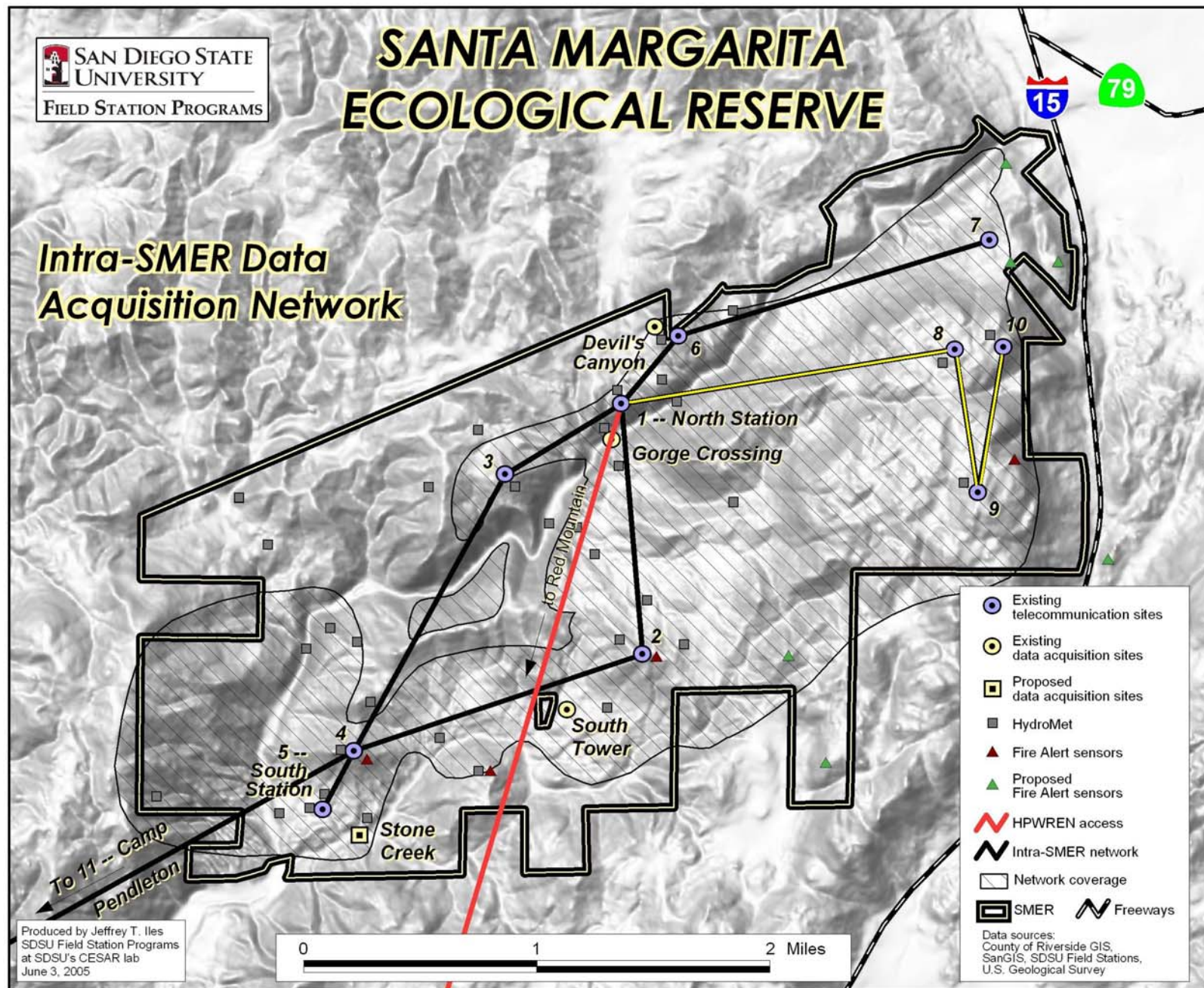- Emergency Response

Sky Oaks Link

SMER Highlands Install

TCS8

TCS9

TCS10

SANTA MARGARITA ECOLOGICAL RESERVE

San Diego State University — Field Station Programs

Intra-SMER Data Acquisition Network

Devil's Canyon

6

7

8

10

1 -- North Station

Gorge Crossing

3

9

to Red Mountain

2

South Tower

4

5 -- South Station

Stone Creek

To 11 -- Camp Pendleton

Legend

- ◉ Existing telecommunication sites
- ◉ Existing data acquisition sites
- ▣ Proposed data acquisition sites
- ■ HydroMet
- ▲ Fire Alert sensors
- ▲ Proposed Fire Alert sensors
- HPWREN access
- Intra-SMER network
- Network coverage
- SMER
- Freeways

Produced by Jeffrey T. Iles
SDSU Field Station Programs
at SDSU's CESAR lab
June 3, 2005

0   1   2 Miles

Data sources:
County of Riverside GIS,
SanGIS, SDSU Field Stations,
U.S. Geological Survey

15   79

Fire Sensor Demonstration Project
at Santa Margarita Ecological Reserve

- Demonstrate and evaluate early warning system and community education website
- $1.2 million project funded by the National Telecommunications and Information Administration
- Collaboration among community groups, business, universities, public agencies

Fire Sensor Demonstration Project
at Santa Margarita Ecological Reserve
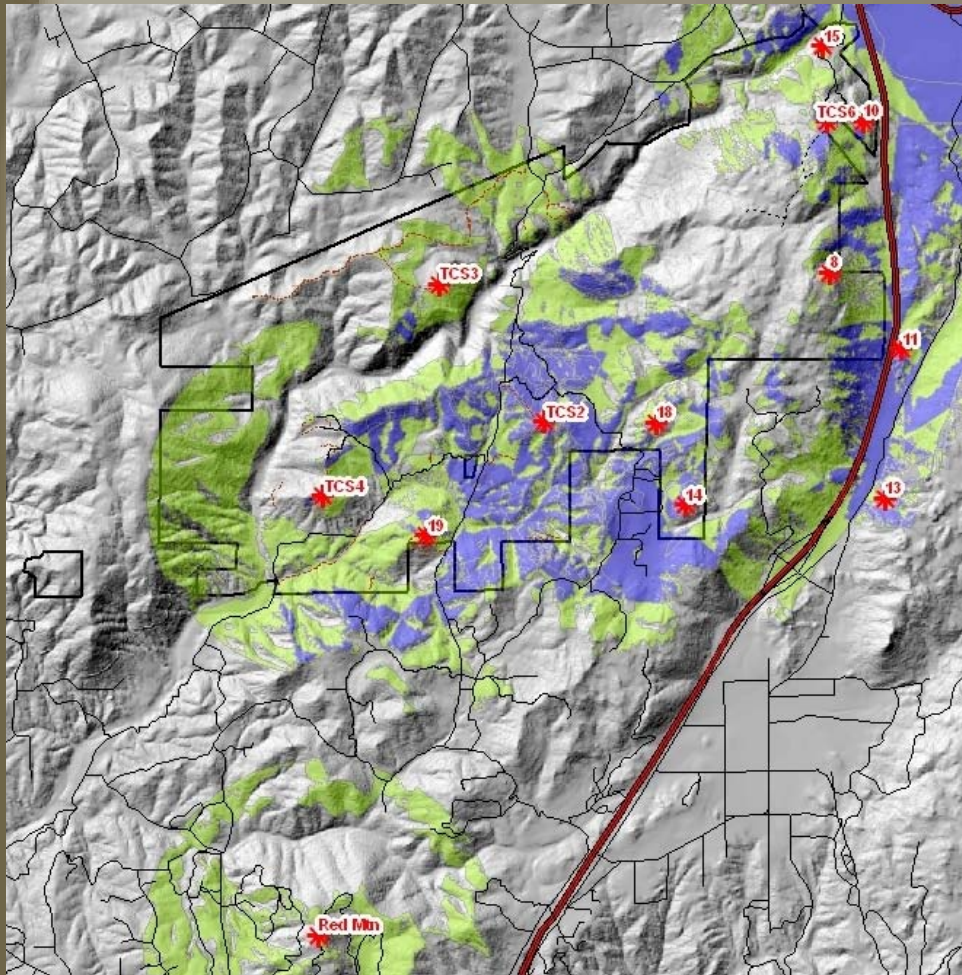
FireAlert by Ambient Control Systems

- 360 degree rotating eye

- 45 degree vertical view

- 20 year field life

- Detect 4x4' fire from ¼ mile

- Reports direction of fire in 10 degree increments

- Radio & satellite communication

Fire Sensor Demonstration Project
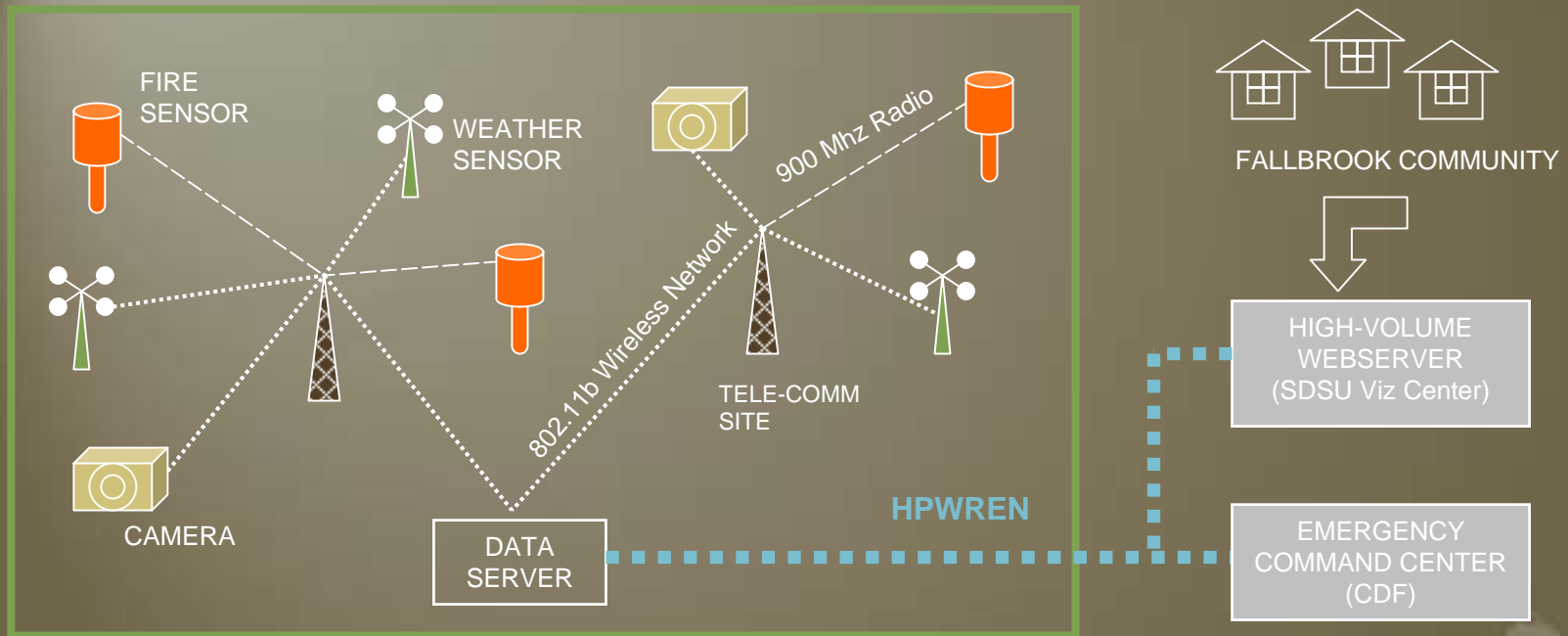# at Santa Margarita Ecological Reserve

Coverage of rugged backcountry & urban-wildland interface using:

- 13 fire sensors
- 9 webcams
- 20 weather stations

Products:

- Early warning system for CDF
- Community Education website
- Evalutation of community response

Fire Sensor Demonstration Project
at Santa Margarita Ecological Reserve

FSP Web Site, RoadNet and HPWREN

- Field Station Programs Web Site.
Real Time Data, REMO

- RoadNet Support and Web Display.
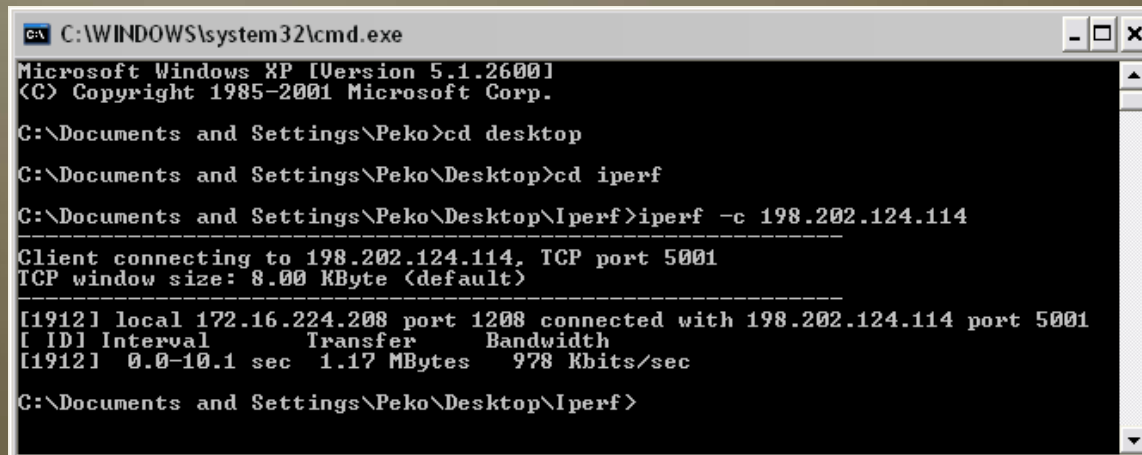Nagios

- HPWREN Photo Page.
Cameras

HPWREN at SDSU

• Upgraded links to Licensed 11GHz radios.

• Telecommunication and Network Services (TNS) routing HPWREN subnet 172.16.139.n on campus. (Karen Anderson and John Denune)

• Exploring the possibilities of using SDSU's 2.5GHz spectrum for future research.

Intra-SMER Backbone Upgrade

- Replace Lucent 2.4 GHz radios with Trango Atlas 5.3 – 5.8GHz radios.

- Augment solar power systems at TCS3 and TCS4 with the addition of two 80 watt PV panels and two 100ah batteries.
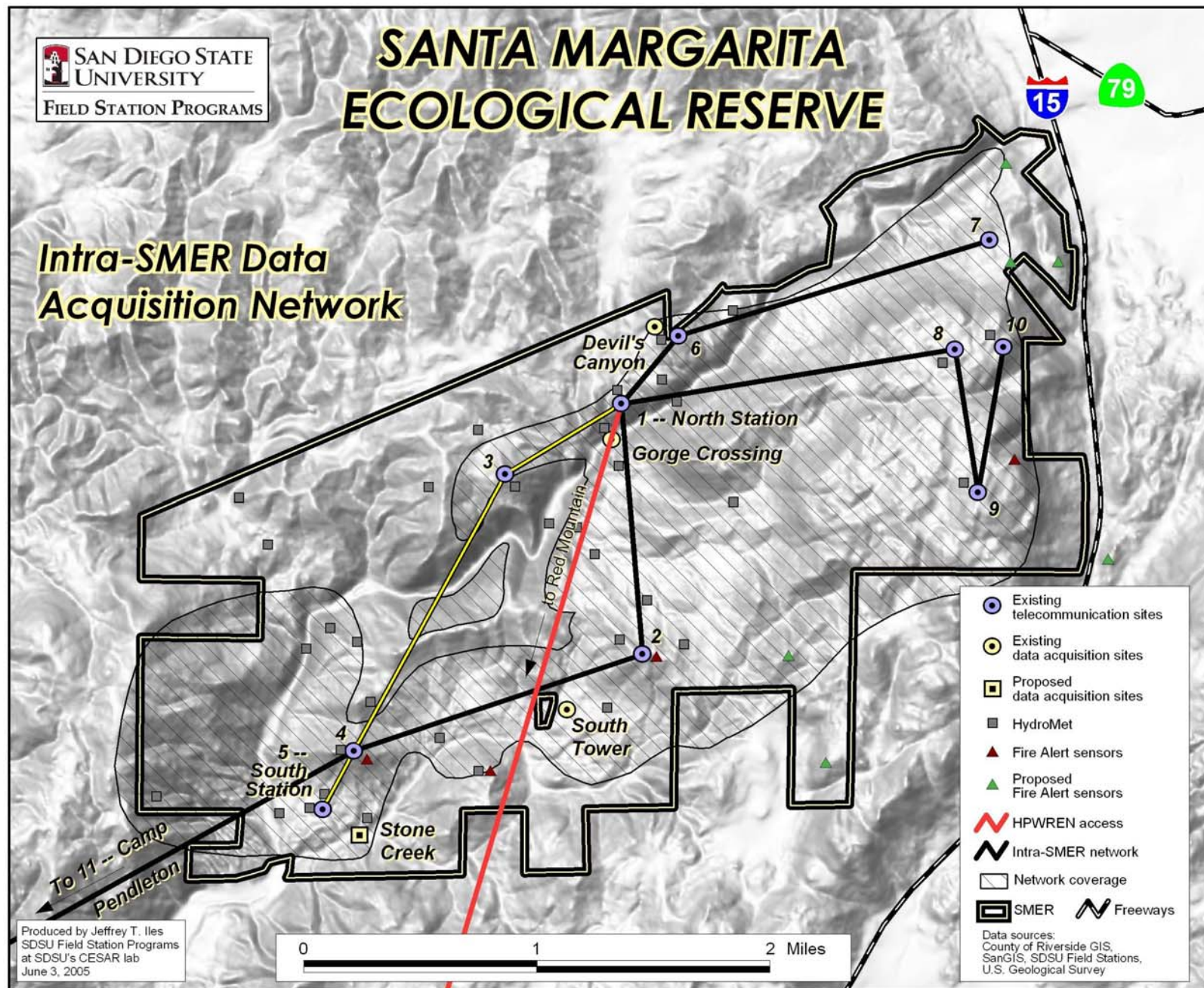
```
C:\WINDOWS\system32\cmd.exe                                    _ □ ×

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Peko>cd desktop

C:\Documents and Settings\Peko\Desktop>cd iperf

C:\Documents and Settings\Peko\Desktop\Iperf>iperf -c 198.202.124.114
------------------------------------------------------------
Client connecting to 198.202.124.114, TCP port 5001
TCP window size: 8.00 KByte (default)
------------------------------------------------------------
[1912] local 172.16.224.208 port 1208 connected with 198.202.124.114 port 5001
[ ID] Interval       Transfer     Bandwidth
[1912]  0.0-10.1 sec  1.17 MBytes   978 Kbits/sec

C:\Documents and Settings\Peko\Desktop\Iperf>
```

SANTA MARGARITA ECOLOGICAL RESERVE

San Diego State University — Field Station Programs

I-15   79

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How do we respond to a regional disaster?

- How important is voice and data communications for operation of large scale emergency response?

- Identify sources of Internet access: HPWREN, Intra-SMER, Starbucks, Borders, home based cable…etc?

- What hardware is needed; Radios, VoIP, cameras, tripods, enclosures, generators…etc?

- What are the mechanisms for training, deployment?

- Where is the funding?