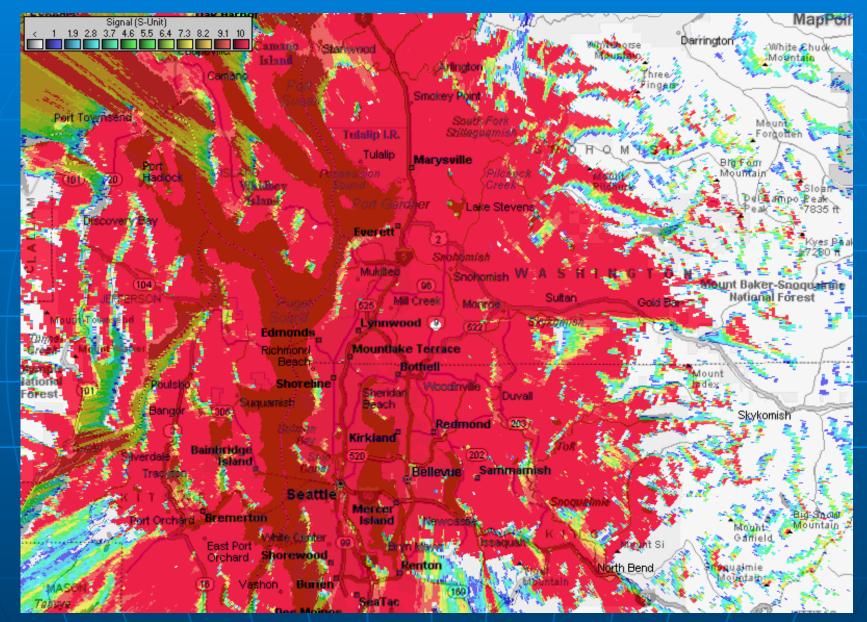
# Radio Mobile

### Introduction to Radio Mobile

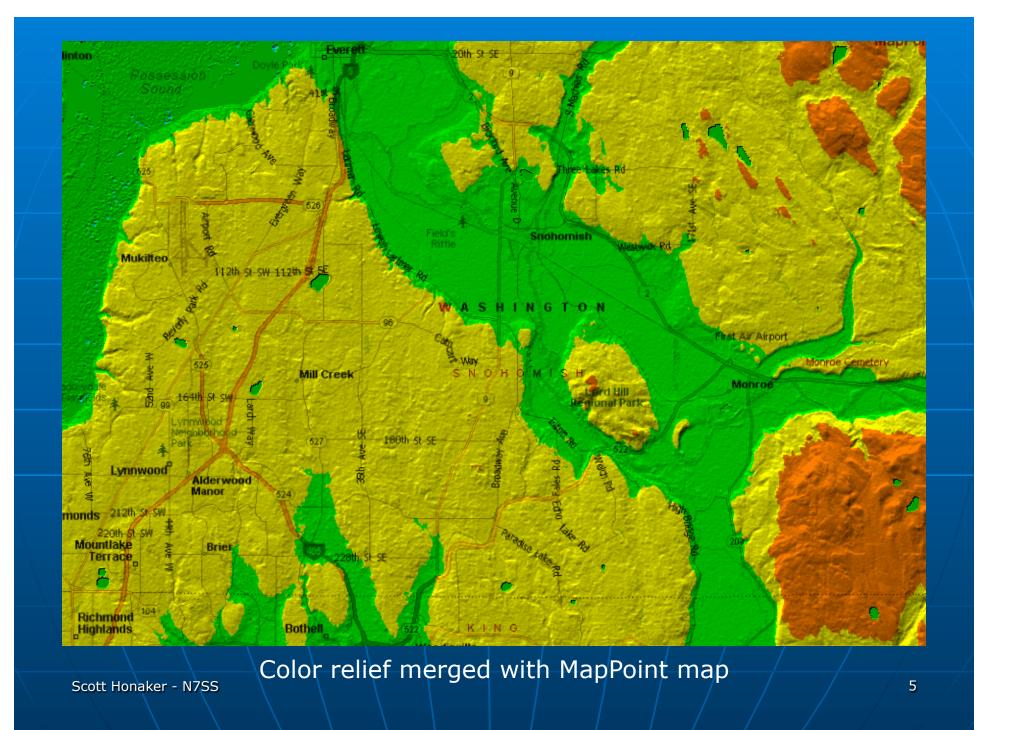
VHF/UHF/Microwave Propagation Point to point (network) link quality Coverage maps • Interference maps HAAT Visual Horizon Limited APRS Support via AGWPE Many (UI-View Compatible) Maps



Clearview 70cm repeater coverage over B/W MapPoint map

### Multiple Map Data Sources

Shuttle Terrain data
MapPoint/MapQuest/Tiger
GoogleMaps/YahooMaps
TerraServer/LandSat Aerial photos
Terraserver/Toporama topo maps
More...



### Multiple Map Views

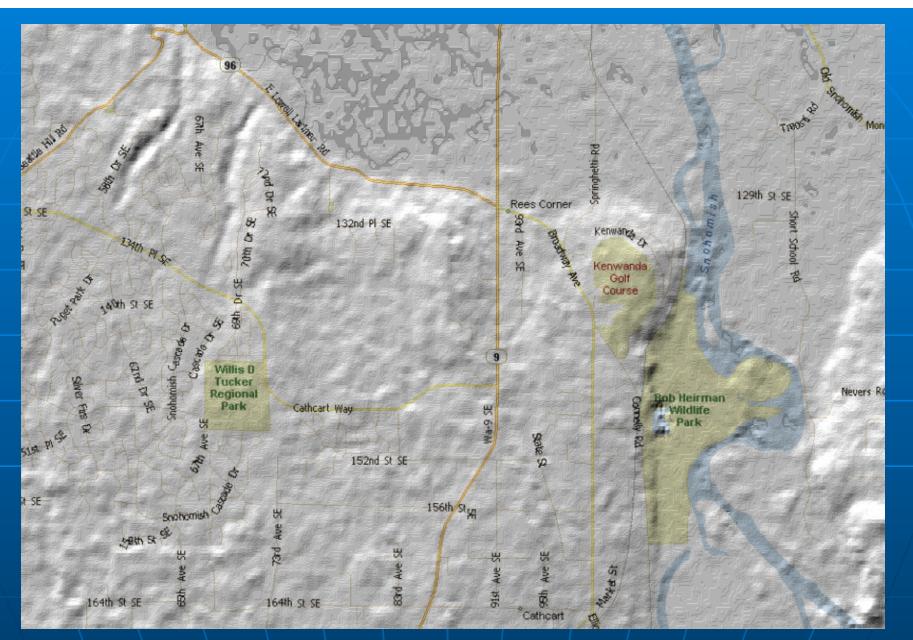
Possible to merge mapping products Several types of color or B/W Relief Adjustable 3D terrain view • "Stereo" view (3D glasses required) Internal features Draw contour lines or flood • Draw grid or rings Show text, "city" or "unit" labels Force gray scale



#### TerraServer aerial view of N7SS QTH with 10' elevation contours

### Space Shuttle Data

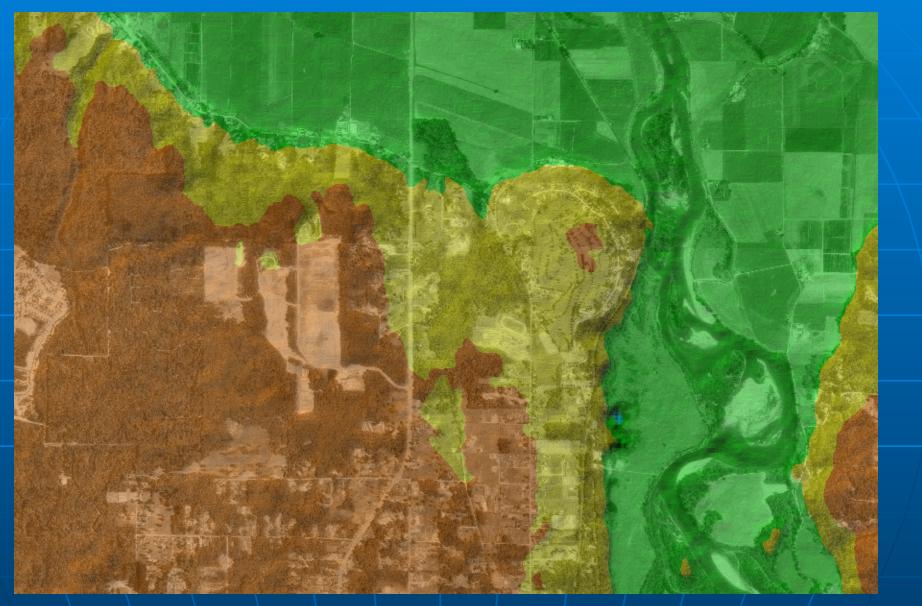
Shuttle Radar Topography Mission
STS-99
Different resolutions available
Use highest for best accuracy
1 arcSecond (30m) resolution default
1/3 acrSecond (10m) now available



B/W relief merged with MapPoint map

## **Map Properties**

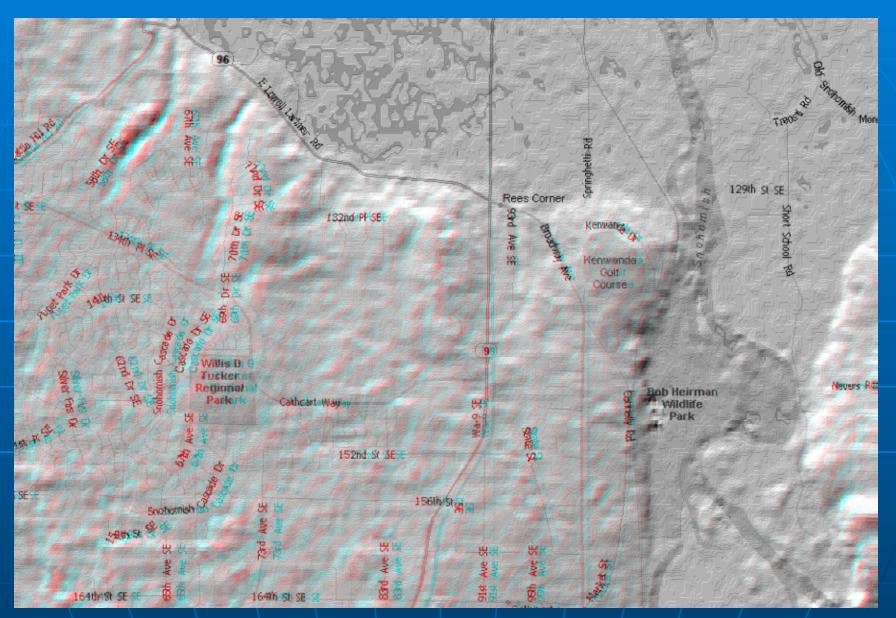
Centre 47*52'09.0''N 122*06'52.9''W CN87WU	Size (pixel) Width(pixels) 900 630	Apply
Latitude Longitude 47.86918 -122.1147 Use cursor position	Size (km) Width(km) E.71 4.00	Cancel Top Left 47*53'14''N 122*09'11''W
World map Select a city name Enter LAT LON or QRA	Elevation data source Drive or path Top layer None  C Browse SRTM  ham\radio mobile\srtm Browse	Top Right 47°53'14''N 122°04'35''W Bottom Left 47°51'04''N
N7SS	None     c     Browse       None     c     Browse	47 51 04 N 122°09'11''W Bottom Right 47°51'04''N 122°04'35''W
<ul> <li>Adjust units elevation</li> <li>Merge pictures</li> <li>Force gray scale</li> </ul>	None     c     Browse       Ignore missing files     Bottom layer       Initialize matrix with elevation (m)     0	



Color relief merged with B/W TerraServer aerial photography

## **Picture Properties**

Draw mode			Apply	
Gray scaled slope	Bottom elevation (m)	62.00		
Colored slope (absolute)	Top elevation (m)	375.00	Cancel	
<ul> <li>Colored slope (relative)</li> </ul>	Contrast (%)	30	3D picture	
C X-ray C X-ray (inverted)	Brightness (%)	70	Stereo	
C Rainbow Colors	Light azimuth (*)	335		
✓ Draw objects	🥅 10 m contour i	ntervals		
	🔲 100 m contour	intervals	Object drive/path	
Show cities	🔲 500 m contour	intervals	c	
Font Transparent	Dther (m)	3	Browse direcory	
Elevation data source: c:\ham\rac Map statistics: Minimum 62.0 m - N Fits elevation data in memory Width=900 Pixels Height=630 Pix Path: c:\ham\radio mobile\	faximum 375.0 m - Ave	rage 180.1 m		



B/W stereo relief merged with MapPoint map

## Oso Land Slide Area in 3D



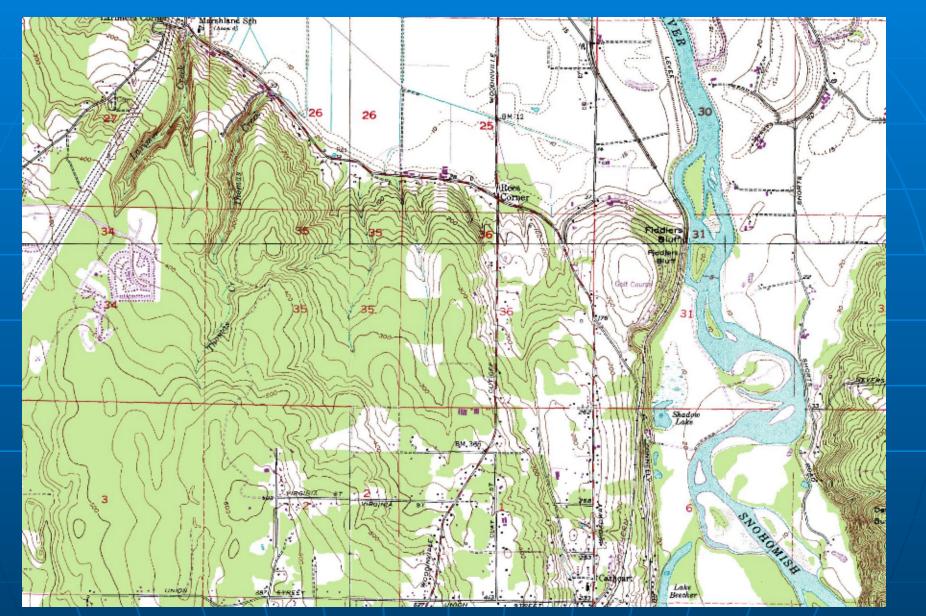
#### Local (4km wide) relief map merged with MapPoint then rendered in 3D

## Merge Picture

#### 🔀 Merge pictures over ..\default.bmp

Source	Terraserver selection	Applu
	Public domain	Apply
C Another picture	Aerial color photo	Cancel
C Internet LANDSAT - World	C Aerial photo B and W	Operation ———
Internet Terraserver - USA	🔿 Торо Мар	С Сору
C Internet Tiger - USA		Add
🔿 Internet Toporama - Canada	Resolution	C Multiply
C Land Cover	● 1m	C Bitwise
	○ 2m ○ 32m	Contrast=1
C ADRG - CADRG		
Internet MapPoint	C 4m	Brightness=1
C Internet MapQuest	C 8m	
		Reset

×



TerraServer topographic map (2m resolution) Hwy 9 in Cathcart



Scott Honaker - N7SS TerraServer aerial view of Hwy 9 in Cathcart

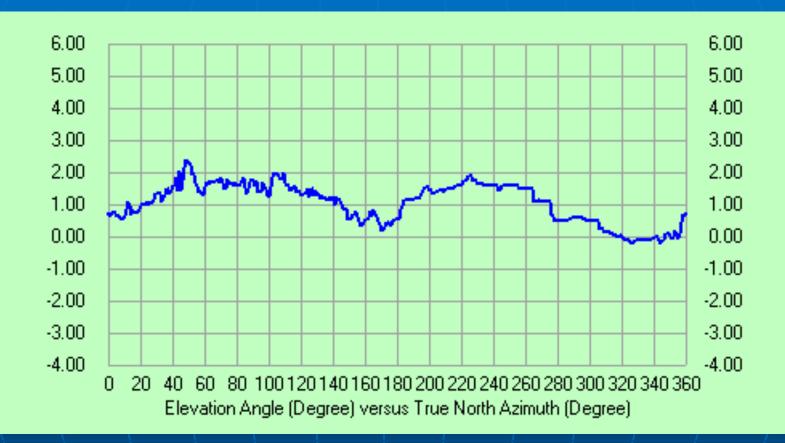
## **Advanced Mapping**

#### View on take-off from Harvey Field runway 14



TerraServer color aerial photo with 3D picture view

### Visual Horizon



Mt Baker at 12°, Mt Pilchuck at 49°, Clearview hill to SSE

# **Unit Properties**

Devil's Mtn	Name	Elevation (m)	
Frenchman	Mt Pilchuk	823	Apply
KK7LK	· ·	,	
Mt Crag	Position		
Mt Erie	Copy 48°04'	'09.0''N 121°50'17.0''W Paste	Undo unit
Mt Pilchuk		CN98BB	
N7SS	Locked		Harrison
Clearview			Move up
Ryegrass	Ent	ter LAT LON or QRA	
Stensgar			Move down
Steptoe Butte	Place	e unit at cursor position	
WA7TZY			_
W7GTM	Place	e cursor at unit position	Export
CN76		s career at anic position	
FD2 FD3		dd unit to cities dat	Import
W7GHZ	A	ad unit to citles.dat	
Grizzly Peak	Ge	et unit from cities.dat	Clear all
Mica PK			
Mt Ashland	Style		Sort
Mt Hebo			
Mt Octopus	🔽 Enabled 🤇	🔿 Left 🛛 🧿 Centre 🔿 Right	Apply style
N7AU	Transparent		Upply style
Paulina Peak		DeathColor DeceOnter	
Constitution		BackColor ForeColor	
Pine Mt	Icon 16x16 pixels		
W7PUA	•	•	_
Indian Rock			<u>Y</u>
Kamiak Butte Knowlton Knob	💌 🗖 Show only units th		Example

## **Networks Properties**

Net 1       Parameters       Topology       Membership       Systems       Style         Net 3       Net 4       Net 3       Net 4       Net 5       Style         Net 4       Net 5       Net 6       Net 1       Surface refractivity (N-Units)       301         Net 7       Net 8       Net 1       Surface refractivity (N-Units)       301         Net 8       Net 1       Minimum frequency (MHz)       146       Ground conductivity (S/m)       0.005         Net 10       Maximum frequency (MHz)       146       Relative ground permittivity       15         Net 11       Net 12       Mode of variability       Ground conductivity (S/m)       0.005         Net 13       Net 14       Mode of variability       Ground conductivity (S/m)       0.005         Net 13       Net 14       Mode of variability       Ground conductivity (S/m)       0.005         Net 13       Net 14       Mode of variability       Ground conductivity (S/m)       Continental sub-tropical         Net 18       Mattine sub-tropical       Maritime sub-tropical       Desert       Continental temperate         Net 20       Net 21       Net 23       Net 23       Net 24       Net 24       Net 24         Net 23       Net 24       City	Ketworks properties	Default parameters         Copy Net         Paste Net         Cancel         Apply	
	Net 2 Net 3 Net 4 Net 5 Net 6 Net 7 Net 8 Net 9 Net 10 Net 11 Net 12 Net 13 Net 14 Net 15 Net 15 Net 15 Net 16 Net 17 Net 18 Net 19 Net 20 Net 21 Net 22 Net 23 Net 24	Parameters       Topology       Membership       Systems       Style         Net name       Net 1       Surface refractivity (N-Units)       301         Minimum frequency (MHz)       146       Ground conductivity (S/m)       0.005         Maximum frequency (MHz)       146       Relative ground permittivity       15         Polarization       Climate       Climate       Climate            • Vertical       Horizontal       Climate       Continental sub-tropical            • Spot       % of time       50       Continental sub-tropical       Climate            • Mobile       % of locations       50       Continental temperate       Continental temperate            • Broadcast       % of situations       50       Maritime temperate over land       Continental temperate	

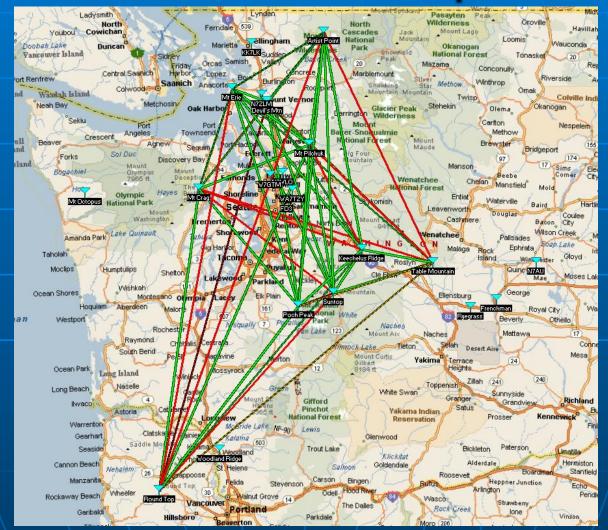
## **Network Membership**

	etworks properties						
List o	of all nets	Default parameters	Copy Net	Paste Net	Cancel	Apply	
Net Net Net Net Net Net Net Net Net Net	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	List of all units	(Disabled) (Disabled) (Disabled)	Membership Member of Role of D Comman System System Antenn © System	Net 1           evil's Mtn           id           1           a height (m)           tem	Style	
Coatt Harshar, NZCC							
Scott Honaker - N7SS							

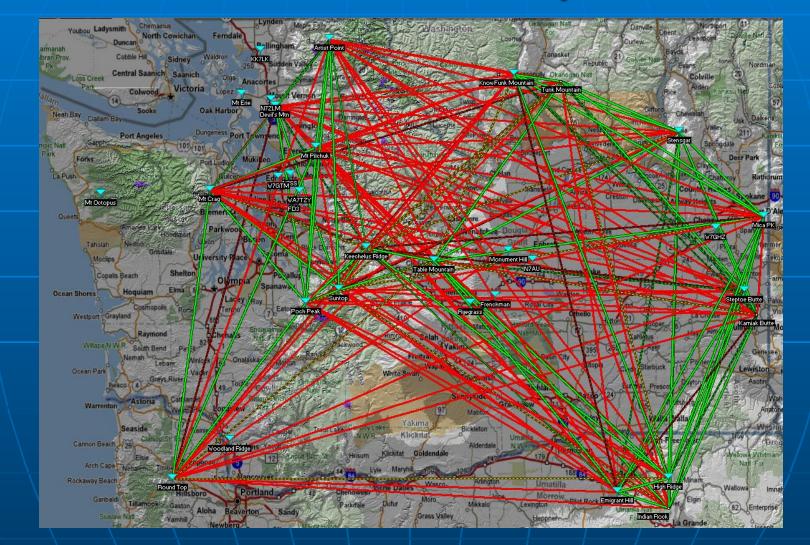
## **System Properties**

🔀 Networks properties			
List of all systems	Default parameters Copy N	let Paste Net Cancel Apply	
System 1 System 2 System 3 System 4	Parameters Topology	Membership Systems Style	
System 5 System 6 System 7		Select from Radiosys.dat	
System 8 System 9 System 10	System name Transmit power (Watt)	System 1 50 (dBm) 47	
System 11 System 12 System 13	Receiver threshold (µV)	1 (dBm) -107	
System 14 System 15 System 16	Line loss (dB)	0.5 (Cable+cavities+connectors)	
System 17 System 18	Antenna gain (dBi)	8 (dBd) 5.85	
System 19 System 20 System 21	Antenna height (m)	50 (Above ground )	
System 22 System 23	Additional cable loss (dB/m)	0 (If antenna height differs ) —	
System 24 System 25	Add to radiosys.dat	Remove from radiosys.dat	

## **Network Map**



# **Network Map**



## Try Your Own

Download Radio Mobile http://www.cplus.org/rmw/english1.html Create two "Units" Yourself and someone else Add both units to a common "Network" Create map (File Map Properties) View Show Network