

FOREST BIOSECURITY SURVEILLANCE – WHAT'S CHANGED?

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PURPOSE

- Explain how the new FBS will operate and what it will deliver, compared to the old FHS
- Provide background to those that might be interested

OUTLINE

1. Roles
2. Drivers for change
3. The new FBS – what's changed
4. Developing the new FBS
5. Background
 - Industry and MPI in Biosecurity
 - Why Forest Health Surveillance?
 - Link to MPI's HRSS system

1. ROLES

- **Bill Dyck – FOA Biosecurity Manager**
- **Helen Chapman – FOA Biosecurity Administrator**
 - Biosecurity database management
 - Reporting
 - Some liaison with industry and others

2. DRIVERS FOR CHANGE:

GIA

- Partnership – Govt/industry
- Readiness and response
- Shared decision-making/cost
- Readiness 50/50

Log levy 1 Jan 2014

- FHS to expand to 100%
- Redesign with MPI



3. THE NEW FBS

Same objectives:

- Protect forests
- Safe trade
- Investor confidence

Diagnostics/database

More risk-based

- Expect more high risk plots
- Less intensive survey in remote areas



REGIONAL REPORTS – NOT FOREST REPORTS

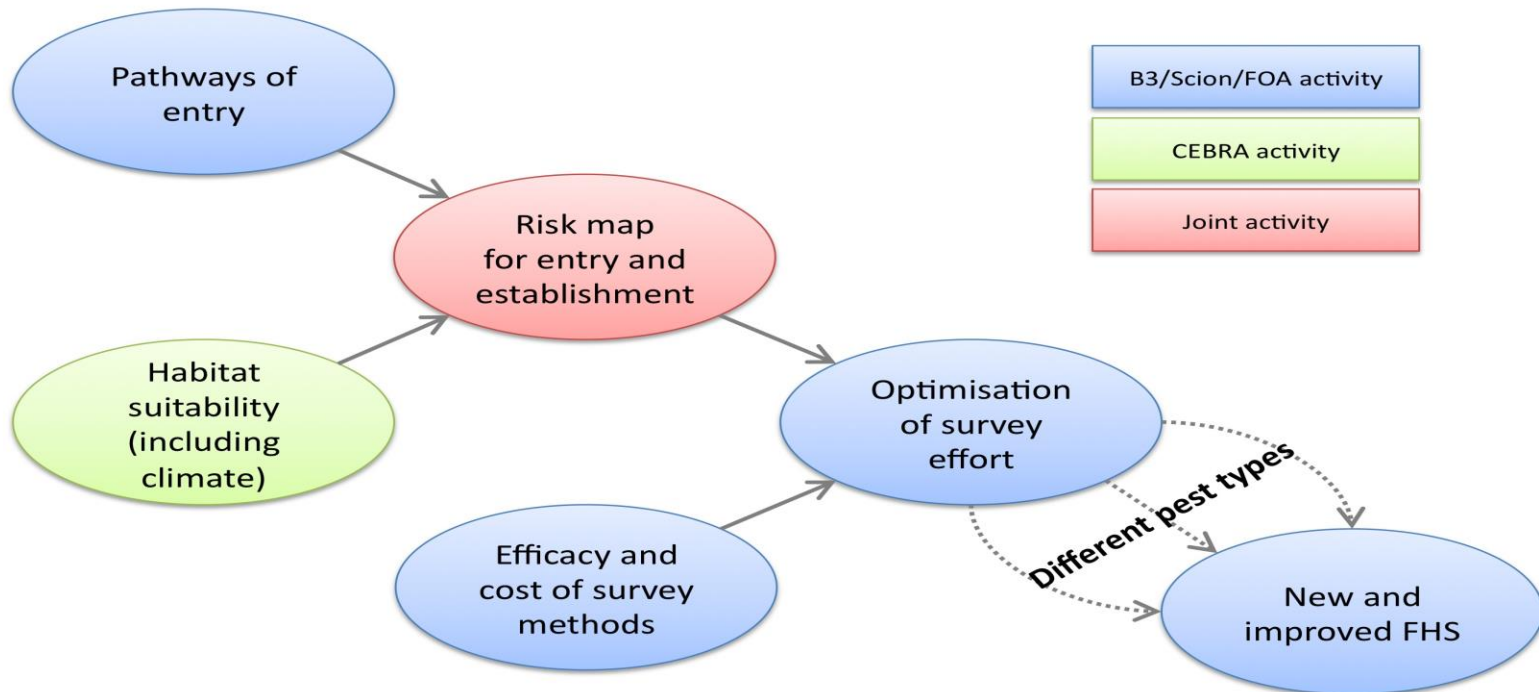
- **Focus is new incursions – not health**
- **No forest report – unless arranged**
- **Regional report – 6 monthly**
 - Incursion tracking – point based
 - Forest health - broad-brush
 - Confidentiality? Need to discuss!
- **Could also report high risk areas from model predictions**

4. DEVELOPING THE NEW FBS



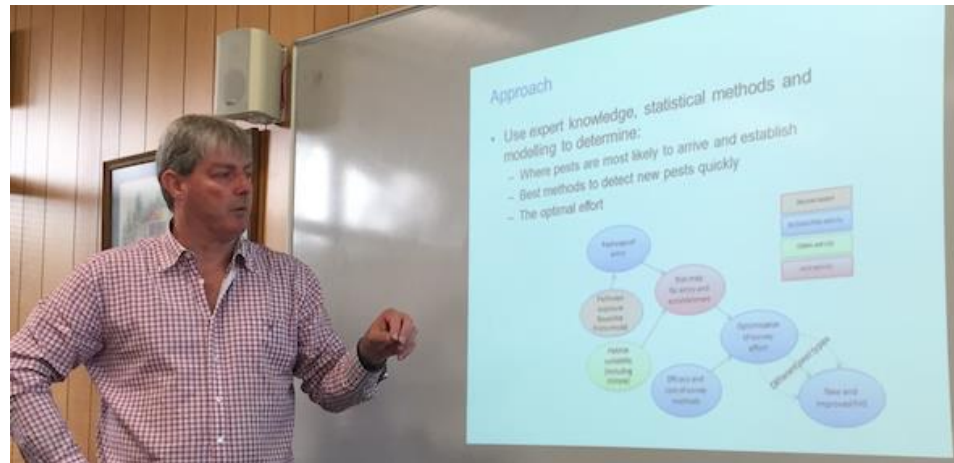
THE PLAN – DEVELOPED JUNE 2014

NZ Forest Health Surveillance system re-design project



KEY PLAYERS

- FOA
- MPI
- Scion
- CEBRA
- AgResearch
- BayesNet Intelligence
- SPS



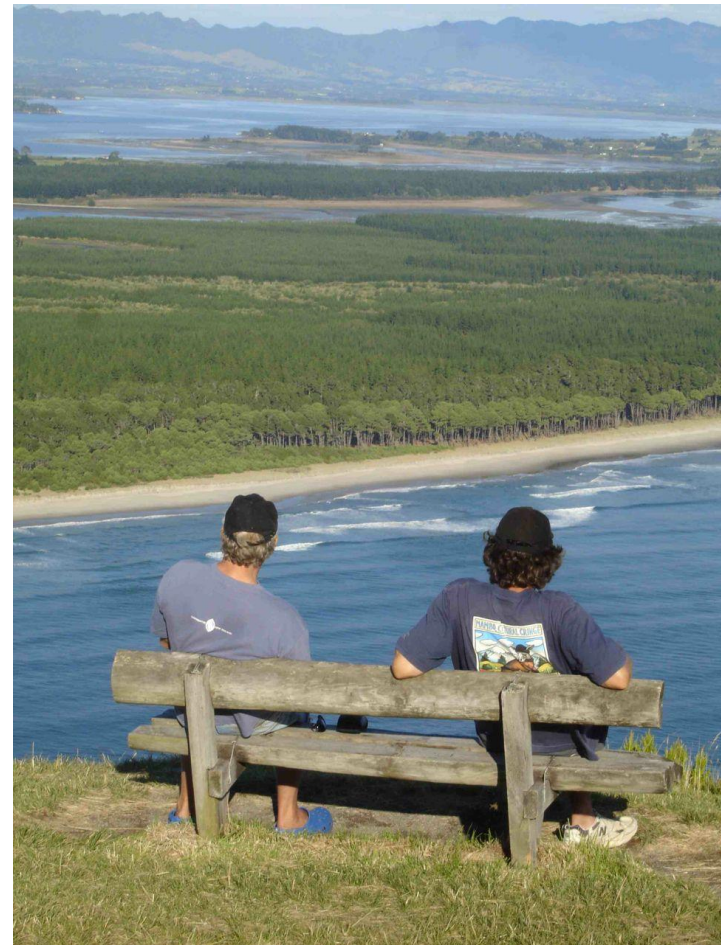
CURRENT SITUATION (JULY 2016)

- BAU plus pilot
- Test model
- Refine costs
- Tender
- Implement 1 Jan 2017
- Communication important



ISSUES TO RESOLVE:

- Reporting confidentiality
- Contract for FBS vs contract for HRSS
- Who pays for the HRSS?
- Where do nurseries fit?

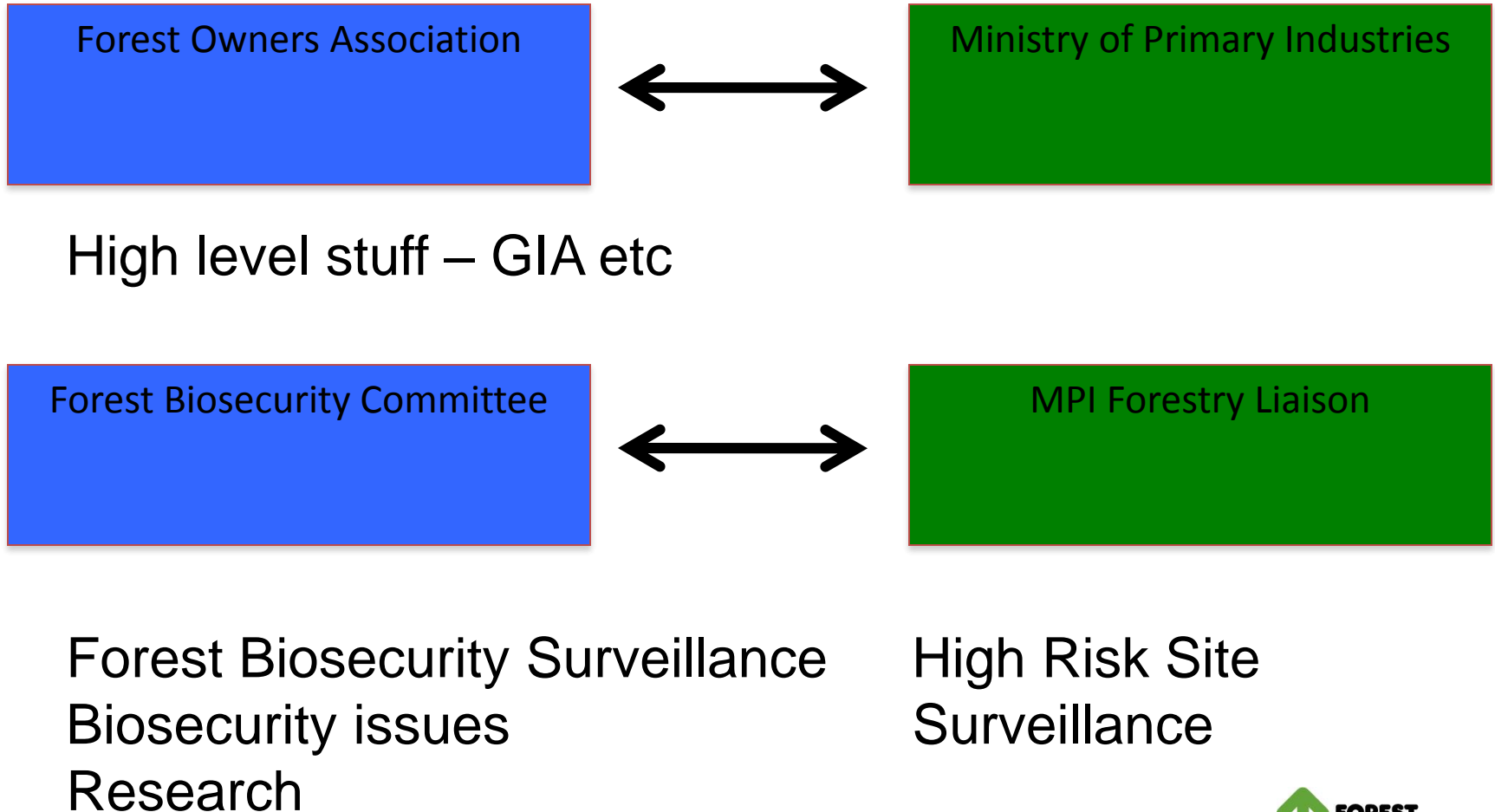


5. BACKGROUND

- For those that want to know more

INDUSTRY AND MPI BIOSECURITY

Contributions at two levels



WHY FOREST BIOSECURITY SURVEILLANCE?

Primary Objectives

1. Detect new incursions
2. Trade assurances
3. Investor confidence



www.nzfoa.org.nz Log trade



Mt Pine Beetle BC



Painted Apple Moth

FHS HISTORY

- Forest health surveillance started in 1956
- Focus on insect monitoring (post sirex outbreak)
- Dothi confirmed 1964
- Late 60's a shift to early detection/investigation



FHS HISTORY CONT'D

- Early 70's Port Environs survey
- Aerial assessment developed
- 1979 Review – recom' detection effort at high risk areas and greater aerial survey
- By 1982 aerial survey was routine



FHS HISTORY CONT'D

- By mid 1980's FHS was established
- Aerial and ground
- Diagnostics
- Forest Health database
- Things changed in 1987 when FS disappeared



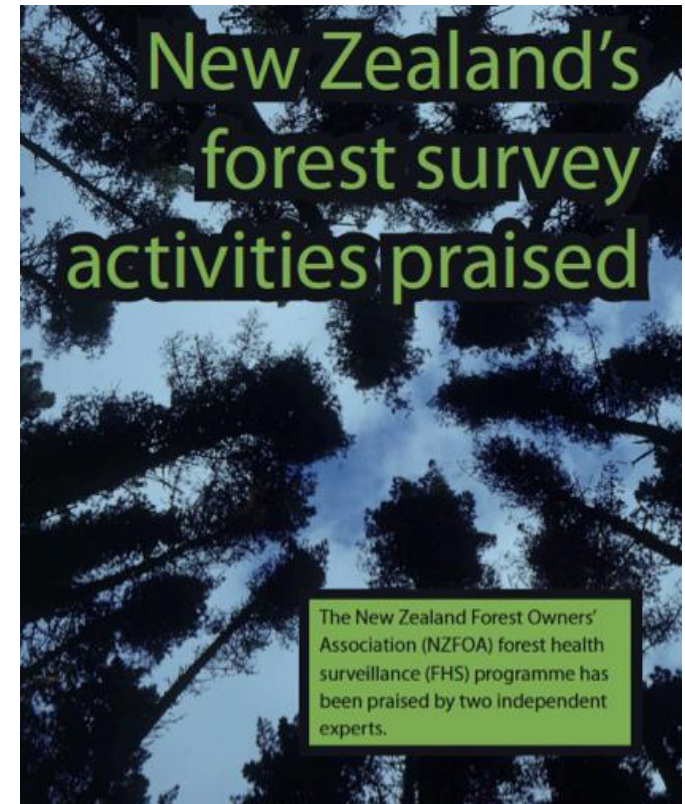
FHS HISTORY CONT'D

- New scheme developed
- Industry input
- Survey trials used
- Intensity based on risk –
The Carter Model (1989)
- 1995 – further trials (LB)
- Efficiency determined
- Detection probability
possible



FHS HISTORY CONT'D

- 2000 – industry made scheme contestable
- 2007 – international review
- 2013 – looking at extending to 100% plantations
- Redesign opportunity
- Scientific credibility
- Cost-effective
- Diagnostics



THE CURRENT FHS - SPECS

- Aerial survey – 1000m transects 300m above ground flown at 70-75 knots etc
- Drive through survey - >15m/ha at 15 km/hr etc
- Investigative Health Plots (IHPS) – based on above surveys
- >100m transects
- All points recorded
- Field and GPS

Minimum Plotting frequency targets	
Size of Forest (Ha)	No. of IHP's
0-200	1
201 -500	2
501 – 1,000	3
>1,000	3/1,000 Ha

FHS - HRFS

- High Risk Forest Site Plots
- 60 in total
- 0.1 ha
- 100m x 10m transects (4)
- Intensive sampling
- High-use forests
- Super-skids etc
- Picnic sites



FHS - COSTS

- Currently about \$0.5-0.7/ha – but varies by region
- Includes diagnostics
- Research separate



MPI – HIGH RISK SITE SURVEILLANCE (HRSS)

- > 25 years; revised 2005
- Previously was “Port-environs”
- Focus on “arborescent plants”
- Targets trade pathways and risk sites

High Risk Site Surveillance (HRSS) is a post-border risk-pathway-focused surveillance programme operated by MAF, targeting vegetation (primarily trees and shrubs) and wooden materials. The primary objective of the HRSS programme is to detect new plant pests that pose a biosecurity risk or may impact on trees and shrubs (e.g., plantation forests, native forests and urban trees).

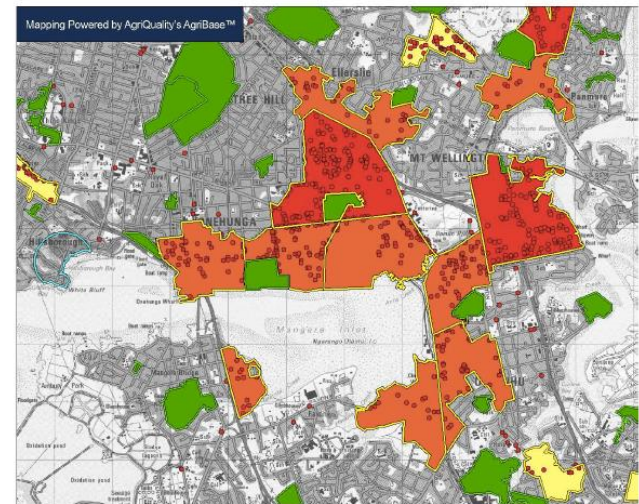


Figure 2. Risk Site Areas (red and orange) and Vegetation Rich Areas (green) around Metroport in Auckland.

MPI - HRSS

Objectives:

- Provide effective detection of plant pests
- Provide justifiable claims of pest free status
- Monitor pest distribution
- Host record



Asian Gypsy Moth

MPI - HRSS

Phases of Risk Site Area inspection:

1. Intensive transect inspection
2. Extensive walkthrough
3. Discretionary surveillance



Rugonectria



Transitional
facility

MPI - HRSS

- Rectangular transects
- Statistically designed
- 21% sig't detections

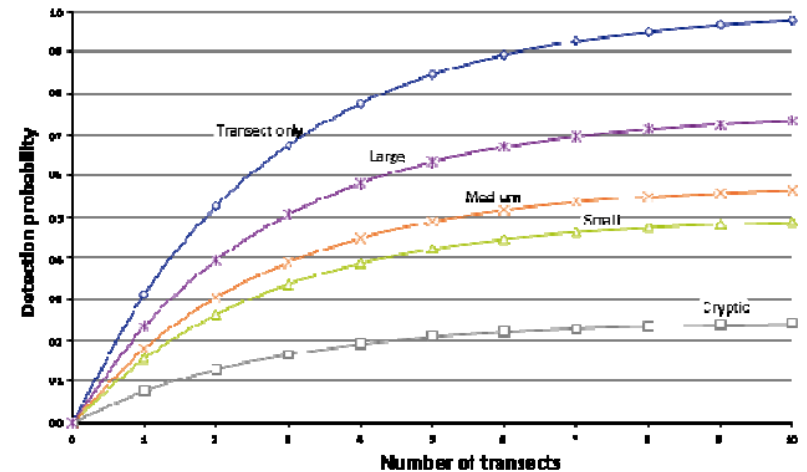


Figure 3. The Detection probabilities for a 100 ha site with a 20 ha infestation, calculated using different visual detection classes (from Murphy 2004b).

Type	2011–2012	2012–2013
Submissions	740	1106
Identifications	966	1627
New to NZ	5	6
Significant to PPIN	147	228
Significant detections (% of total submissions)	20%	21%

MPI – HRSS - STATS

TABLE 2: SUMMARY OF RISK SITE NUMBERS BY TYPE AND TRANSECT INSPECTIONS COMPLETED DURING THE 2010–2011 SEASON

TYPE	NUMBER OF RSAS	NUMBER OF TRANSECTS
Vegetation-rich areas	190	2 266
Transitional Facilities	168	4 358
Tourist risk sites	48	180
Special instructions	15	72
Military bases	5	106
Universities	3	36
Industrial	1	8
Total	430	7 026

MPI – HRSS - STATS

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TABLE 3: SUMMARY OF DETECTION PROBABILITIES FOR THE MAJOR RISK PORTS

RISK SITE	AVERAGE DETECTION PROBABILITY
Auckland seaport RSA	90%
Auckland airport RSA	72%
Tauranga seaport RSA	74%
Wellington seaport and airport RSA	73%
Christchurch airport RSA	74%
Lyttelton seaport RSA	52%

MPI – HRSS - STATS

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TABLE 4: SAMPLES RECEIVED DURING THE 2010–2011 SEASON

SAMPLE TYPE	SAMPLE NUMBERS
Entomology	435
Mycology	401
Host identification	100
Total	936

MPI – HRSS COSTS

- **\$750K/yr for field ops plus**
- **\$300K to \$350K/yr for diagnostics**
- **(fruit fly programme cost = \$1.4M)**
- **Generally pick up 5-6 “new to NZ”/yr**
- **150-220 new host/new regions/yr**
- **Provides indication of spread**
- **Data to FOA FH database**

MPI - HRSS

- More cost-effective than FHS?

Significant finds recorded on the MAF PPIN database 2005-2006

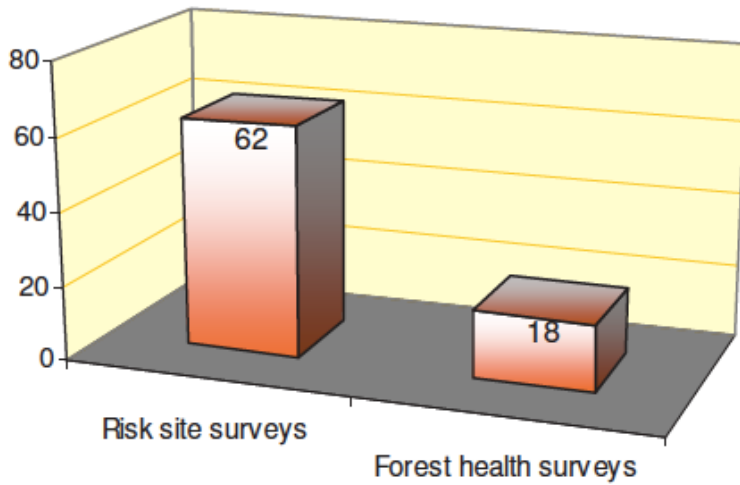


Figure 4. Significant finds from forestry based surveillance programmes recorded in the Plant Pest Information Network (Beal 1997) database (Source: P. Bradbury, pers. comm.).

FHS + HRSS



FHS covers forests

HRSS surveys outside forests