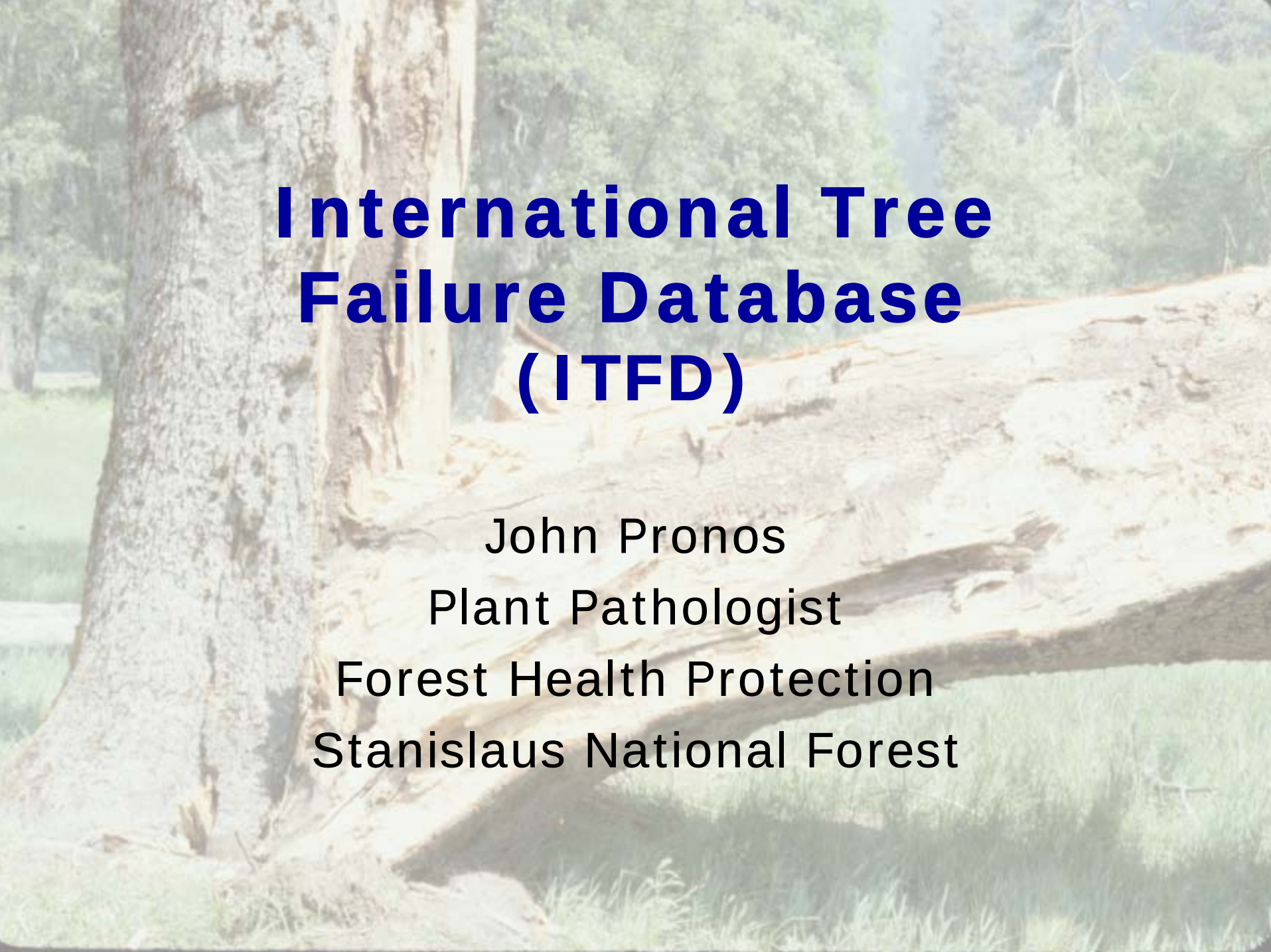


International Tree Failure Database (ITFD)

John Pronos
Plant Pathologist
Forest Health Protection
Stanislaus National Forest

HISTORY OF TREE FAILURE DATABASES

- 1960s to 1970s – Dr. Lee Paine, Pacific Southwest Research Station, Berkeley
  - Thousands of reports from U.S
  - Used to develop first programs to manage hazard trees
- 1987 – California Tree Failure Reporting Program
  - Dr. L. R. Costello, Univ. CA Coop. Extension
  - Dr. Alison Berry, UC-Davis, Environmental Hort.
- 2002 – ISA-PNW Chapter

International Tree Failure Database (ITFD)

-BACKGROUND-

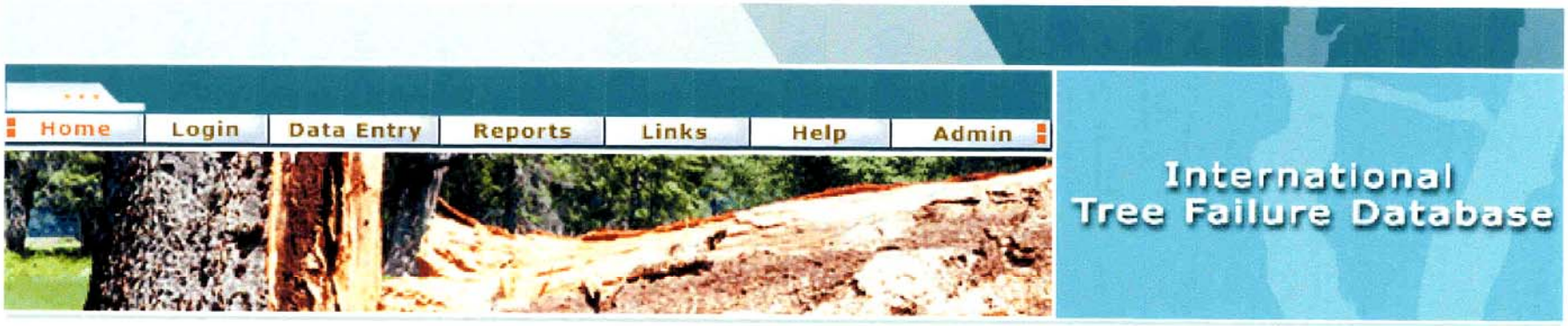
- Planning began in January, 2003
- Group of Forest Health Protection (FHP) pathologists and International Society of Arboriculture (ISA) arborists
- ITFD modeled after California Tree Failure Reporting Program (CTFRP)

Key Points - ITFD

- Collect info to characterize why and which trees fail
- Will include trees on lands of all ownership
- Use one form for all failures
- Voluntary program
- FHP will coordinate with federal and state agencies
- ISA will coordinate with governments at county level and below, plus the private sector

Key Points - ITFD

- Submit tree failure data via internet
- Must be a trained cooperator to submit data
- Reports and database available to all
- Currently (11/2004) 350 cooperators
- Will add CTFRP and PNW-ISA members
- http://ftcweb.fs.fed.us/natfdb



Welcome to the International Tree Failure Database(ITFD)

The ITFD application has an internet based form for collecting important information about trees that have failed structurally. Perhaps the most significant component of the ITFD is the output reports. When the database has received a number of data entry forms for a geographic area, reports will be generated. Over time this data will reveal the characteristics of trees that fail and improve our ability to predict future failures.

To access the on line ITFD form, click the 'login' tab above. Existing users will enter their login name and password to begin a new form. For new users, completion of training is strongly recommended prior to obtaining a username and password. A list of training sessions is provided under the 'help' tab.

The ITFD was designed and developed with our initial emphasis on North America. Although it can be used for data collection and reporting of fallen trees outside of North America, the species list and a few other fields may require minor modification. If you are interested in using this application outside of North America, we encourage you to email or call for further information.

For questions or further assistance, please email itfd

When you are finished entering records, you can Click Here to logout of ITFD.

(Note: Your browsers back button may be disabled at times to prevent losing data.)

International Tree Failure Report Form

North American Tree Failure Report Form

Tree Genus* _____ Date of Report: _____

Species* _____ Tree/Site Ownership: ☐ Private ☐ Utility ☐ Other or unknown

Cultivar _____ ☐ Fed./Nat.: ☐ NFS ☐ BIA ☐ BLM ☐ DOD ☐ NPS ☐ Utility

Country* _____ ☐ State/Province ☐ County ☐ Municipal

State/Province* _____ Address/Site name _____

County _____ GPS: Latitude ____._____Longitude ____._____

Failure Type* (select one)

☐ Trunk (main stem) failure

Height of failure above grade* _____ft.

Dia. at break (inside bark)* _____ in.

DEFECTS ASSOCIATED WITH FAILURE

☐ None ☐ Can't determine
☐ Failed portion dead
☐ Decay ☐ Canker Species: _____
☐ Multiple trunks/codominant stems
☐ Dense crown ☐ One-sidedness
☐ Low live crown ratio
☐ Included bark
☐ Bow ☐ Crook ☐ Sweep
☐ Uncorrected lean
☐ Cracks: ☐ Vertical ☐ Horizontal
☐ Lightning injury
☐ Fire injury ☐ Insect injury
☐ Mechanical injury ☐ Girdling

LOCATION OF DECAY

☐ **Heartwood**
Ave sound wood thickness_____in.
Trunk opening (cavity) at failure ☐ No
☐ Yes, opening _____% of trunk circ.

☐ **Sapwood**
Ave. depth of rot _____in.
Circumference rotted _____%

TYPE OF DECAY

☐ White rot ☐ Canker rot
☐ Brown rot ☐ Don't know
Conks/mushrooms/other signs ☐ No
☐ Yes Name:_____
Distance from conk to failure:_____ ft.

PRUNING HISTORY

☐ No pruning
☐ Topping of main stem (head cuts)
Dia. of stub at cut _____in.
☐ Reduction/Directional pruning
☐ Proper ☐ Excessive
☐ Thinning cuts
☐ Proper ☐ Excessive
☐ Crown raised _____% of tree height

HARDWARE

☐ None
☐ Cable ☐ Intact ☐ Failed
☐ Guying ☐ Intact ☐ Failed
☐ Prop ☐ Intact ☐ Failed
☐ Brace/bolt ☐ Intact ☐ Failed
☐ Girdling hardware
☐ Other device

☐ Branch failure

Dia. at break (inside bark)*_____in.

Total length failed branch* _____ft .

Break at attachment* ☐Yes ☐No

If no, distance from the attachment to break: _____feet

DEFECTS ASSOCIATED WITH FAILURE

☐ None ☐ Can't determine
☐ Failed portion dead
☐ Decay ☐ Dense crown
☐ Heavy lateral limbs/Heavy ends
☐ Included bark ☐ Crook
☐ Failed portion is an epicormic branch
☐ Cracks (in wood)
☐ Mistletoe or epiphyte
☐ Mechanical injury ☐ Lightning injury
☐ Insect injury ☐ Animal injury
☐ Canker/Gall

LOCATION OF DECAY

☐ **Heartwood**
Ave sound wood thickness _____inches
Opening (cavity) at failure? ☐ No
☐ Yes, opening _____% of branch circ.

☐ **Sapwood**
Ave. depth of rot _____inches
Circumference rotted _____%

TYPE OF DECAY

☐ White rot ☐ Canker rot
☐ Brown rot ☐ Don't know
Conks/mushrooms/other signs ☐ No
☐ Yes Name:_____
Distance from conk to failure:_____ ___ft.

PRUNING HISTORY

☐ No pruning
☐ Topping of branches (heading cuts)
Dia. of stub at cut _____inches
☐ Thinning cuts (lateral branches)
☐ Proper ☐ Flush cuts
☐ Lion-tailing
☐ Reduction/Directional pruning

HARDWARE on failed branch

☐ None
☐ Cable ☐ Intact ☐ Failed
☐ Guying ☐ Intact ☐ Failed
☐ Prop ☐ Intact ☐ Failed
☐ Brace/bolt ☐ Intact ☐ Failed
☐ Girdling hardware
☐ Other device

☐ Root failure

PREDOMINANT SITE/SOIL CONDITIONS

Soil texture: ☐ Sand ☐ Loam
☐ Clay ☐ Rock/gravel ☐ Unknown
Soil moisture at time of failure: ☐ Dry
☐ Saturated ☐ Moist ☐Unknown
☐ Restricted rooting depth due to:
☐ Poor drainage ☐ High water table
☐ Shallow or layered soil
☐ Compaction ☐ Other
☐ Soil eroded (roots undermined)
☐ Fill soil against trunk or planted too deep
Depth of excess soil _____ in.
☐ Well surrounds trunk

DESCRIPTION OF FAILURE*

☐ **Roots broken**
Dia. of largest broken root _____ in.
Distance from break to trunk _____in.
Condition of broken roots: ☐ Unknown
☐ Dead, no decay ☐ Decayed
☐ Live, no decay

☐ **Root plate lifted out of ground**
Root plate radius _____ feet.
Root plate depth _____ inches.

DEFECTS ASSOCIATED WITH FAILURE

☐ None ☐ Can't determine
☐ Fire scar ☐ Low live crown ratio
☐ Basal wound ☐ Corrected lean (sweep)
☐ Uncorrected lean
☐ Cracks in trunk prior to failure
☐ Surface roots or root collar wounded
☐ Roots cut/severed (not decayed or broken)
Dia. of largest root at cut _____ in.
Distance from trunk to cut _____ ft.
% of roots cut _____
☐ Roots restricted due to:
☐ Container ☐ Root barrier
☐ Sidewalk/curb ☐ Wall/foundation
☐ Natural feature ☐ Other
Distance from trunk to restriction _____ ft.
% of root zone restricted _____
☐ Root collar girdled ☐ No
☐ Yes % circumference girdled _____

ROOT DECAY

% of roots decayed _____
Conks/mushrooms/other signs ☐ No
☐ Yes Name:_____
Ave. sound wood thickness _____inch
Type: ☐ White rot ☐ Brown rot ☐ Don't know

SURFACE TREATMENT

☐ Mulch ☐ Bare soil ☐ Pavement
☐ Ground cover ☐Gravel/rock ☐Turf
☐ Natural forest litter ☐ Other

IRRIGATION ☐Never ☐ Infrequent ☐ Frequent

TREE FAILURE DETAILS

Tree Age_____years **DBH***_____inches Height_____feet

Whole tree ☐ Dead ☐ Alive Crown declining: ☐ Yes ☐ No

Habitat Information

Trees recently removed in the vicinity of the failed tree:
☐ Yes ☐ No ☐ Don't Know

History of prior failures at site
☐ Yes ☐ No

Tree stand density:
☐ High
☐ Medium
☐ Low
☐ In the open
☐ In a row

Setting
☐ Yard/Garden
☐ Street tree
☐ Park
☐ Golf course
☐ Parking lot
☐ Campground
☐ Picnic area
☐ Trailhead
☐ Other developed forest site
☐ Commercial site / Institution
☐ Utility right-of-way
☐ Highway right-of-way
☐ Forest

Aspect
☐ N ☐ NE
☐ E ☐ SE
☐ S ☐ SW
☐ W ☐ NW
☐ Not applicable/Flat

Site has been recently altered:
☐ Yes ☐ No

Slope (degrees):
☐ No slope ☐ <5
☐ 5-15 ☐ 15-30
☐ 30-45 ☐ >45

Date/Time of Failure*

Date of failure (Mo/Day/Yr): _____

Time of failure hour ○a.m. ○ p.m. ○ unknown

OR

Season of failure: ○ Spring ○ Summer ○ Fall ○ Winter Year _____

Weather and Other Forces at Time of Failure

☐ Unknown

Wind speed (approx.) _____ mph

Temperature (approx.) _____° F

Precipitation: ☐none ☐rain ☐snow ☐ice ☐unknown

Cause/Result of Tree Failure

Why did this failure occur?

Were the defects associated with failure visible before the tree failed? ☐ Yes ☐ No ☐ Don't know

Result of tree failure ☐ Fire ☐ Power outage ☐ Property damage ☐ Personal injury ☐ Other ☐ None

Property damage estimate $_____(US) Cleanup costs $_____(US) If personal injury, describe below.

Additional Comments (injury, target, damage, etc.)

Cooperator name_____

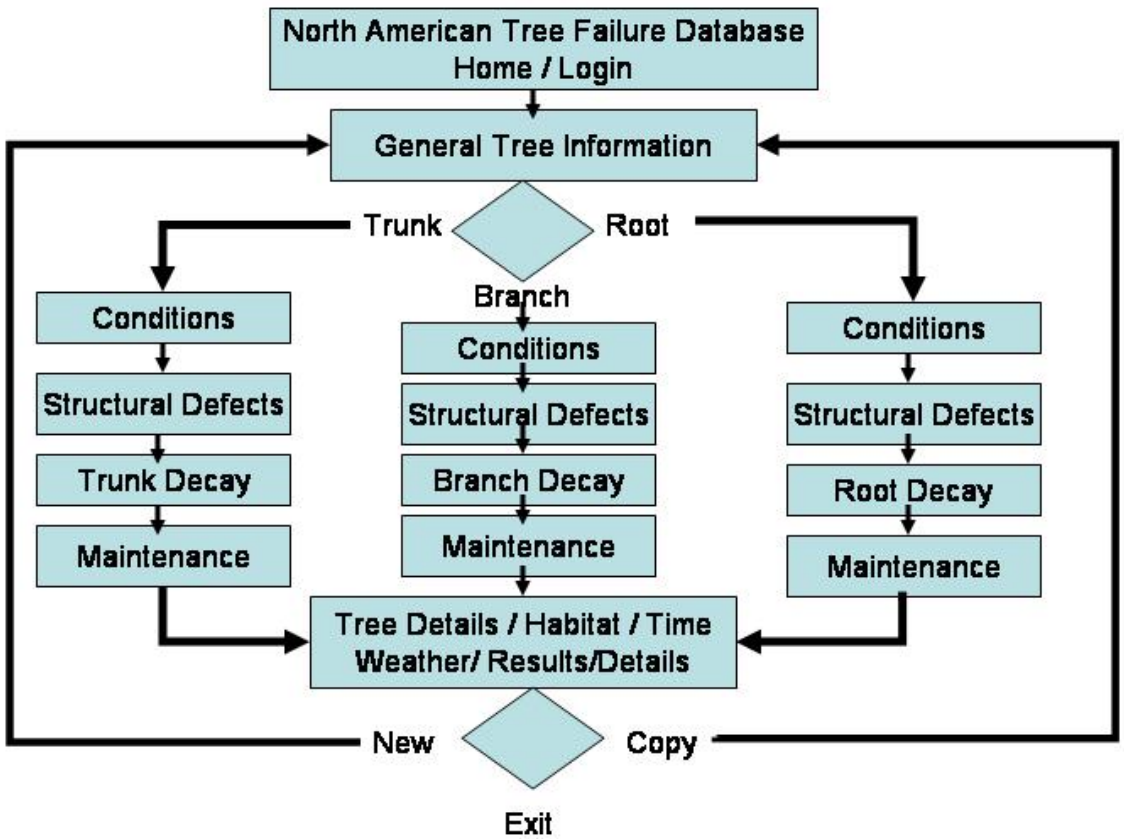
* Required field

Please enter data at http://sidpweb.fs.fed.us/natfdb/

NATFD Field Form Revised 12/17/03

International Tree Failure Database Flowchart

- ITFD data entry procedure



International Tree Failure Report Form

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Species* _____ Tree/Site Ownership: ☐ Private ☐ Utility ☐ Other or unknown

Cultivar _____ ☐ Fed./Nat.: ☐ NFS ☐ BIA ☐ BLM ☐ DOD ☐ NPS ☐ Utility

Country* _____ ☐ State/Province ☐ County ☐ Municipal

State/Province* _____ Address/Site name _____

County _____ GPS: Latitude ____._____Longitude ____._____

Failure Type* (select one)

☐ Trunk (main stem) failure

Height of failure above grade* _____ft.

Dia. at break (inside bark)* _____ in.

DEFECTS ASSOCIATED WITH FAILURE

☐ None ☐ Can't determine
☐ Failed portion dead
☐ Decay ☐ Canker Species: _____
☐ Multiple trunks/codominant stems
☐ Dense crown ☐ One-sidedness
☐ Low live crown ratio
☐ Included bark
☐ Bow ☐ Crook ☐ Sweep
☐ Uncorrected lean
☐ Cracks: ☐ Vertical ☐ Horizontal
☐ Lightning injury
☐ Fire injury ☐ Insect injury
☐ Mechanical injury ☐ Girdling

LOCATION OF DECAY

☐ **Heartwood**
Ave sound wood thickness_____in.
Trunk opening (cavity) at failure ☐ No
☐ Yes, opening _____% of trunk circ.

☐ **Sapwood**
Ave. depth of rot _____in.
Circumference rotted _____%

TYPE OF DECAY

☐ White rot ☐ Canker rot
☐ Brown rot ☐ Don't know
Conks/mushrooms/other signs ☐ No
☐ Yes Name:_____
Distance from conk to failure:_____ ft.

PRUNING HISTORY

☐ No pruning
☐ Topping of main stem (head cuts)
Dia. of stub at cut _____in.
☐ Reduction/Directional pruning
☐ Proper ☐ Excessive
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HARDWARE

☐ None
☐ Cable ☐ Intact ☐ Failed
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Total length failed branch* _____ft .

Break at attachment* ☐Yes ☐No

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PREDOMINANT SITE/SOIL CONDITIONS

Soil texture: ☐ Sand ☐ Loam
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Root plate radius _____ feet.
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☐ Root collar girdled ☐ No
☐ Yes % circumference girdled _____

ROOT DECAY

% of roots decayed _____
Conks/mushrooms/other signs ☐ No
☐ Yes Name:_____
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☐ Mulch ☐ Bare soil ☐ Pavement
☐ Ground cover ☐Gravel/rock ☐Turf
☐ Natural forest litter ☐ Other

IRRIGATION ☐Never ☐ Infrequent ☐ Frequent

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Tree Age_____years **DBH***_____inches Height_____feet

Whole tree ☐ Dead ☐ Alive Crown declining: ☐ Yes ☐ No

Habitat Information

Trees recently removed in the vicinity of the failed tree:
☐ Yes ☐ No ☐ Don't Know

History of prior failures at site
☐ Yes ☐ No

Tree stand density:
☐ High
☐ Medium
☐ Low
☐ In the open
☐ In a row

Setting
☐ Yard/Garden
☐ Street tree
☐ Park
☐ Golf course
☐ Parking lot
☐ Campground
☐ Picnic area
☐ Trailhead
☐ Other developed forest site
☐ Commercial site / Institution
☐ Utility right-of-way
☐ Highway right-of-way
☐ Forest

Aspect
☐ N ☐ NE
☐ E ☐ SE
☐ S ☐ SW
☐ W ☐ NW
☐ Not applicable/Flat

Site has been recently altered:
☐ Yes ☐ No

Slope (degrees):
☐ No slope ☐ <5
☐ 5-15 ☐ 15-30
☐ 30-45 ☐ >45

Date/Time of Failure*

Date of failure (Mo/Day/Yr): _____

Time of failure hour ○a.m. ○ p.m. ○ unknown

OR

Season of failure: ○ Spring ○ Summer ○ Fall ○ Winter Year _____

Weather and Other Forces at Time of Failure

☐ Unknown

Wind speed (approx.) _____ mph

Temperature (approx.) _____° F

Precipitation: ☐none ☐rain ☐snow ☐ice ☐unknown

Cause/Result of Tree Failure

Why did this failure occur?

Were the defects associated with failure visible before the tree failed? ☐ Yes ☐ No ☐ Don't know

Result of tree failure ☐ Fire ☐ Power outage ☐ Property damage ☐ Personal injury ☐ Other ☐ None

Property damage estimate $_____(US) Cleanup costs $_____(US) If personal injury, describe below.

Additional Comments (injury, target, damage, etc.)

Cooperator name_____

* Required field

Please enter data at http://sidpweb.fs.fed.us/natfdb/

NATFD Field Form Revised 12/17/03

Home | Login | Data Entry | Reports | Links | Help | Admin

International Tree Failure Database

1. General Tree Info
2. Failure Type
3. Failure Specifics
4. Structural Defects
5. Decay or Injury
6. Maintenance History
7. Tree Failure Details
8. Weather Conditions
9. Comments & Save

General Tree Info

1

Switch to Metric Data Entry

Tree Genus* (* is Required)

Species *

Cultivar

Country *: United States Of America

State/Province *

County

DBH *: inches

Height: feet

Tree age: years

United States Site/Tree Ownership

- Federal/National

Federal Type ---->

- NFS
- BIA
- BLM
- DOD

- NPS
- Other
- Private
- Utility
- Other or unknown
- State/Province
- County
- Municipal

Forest Service Region --Select One--

Forest Name

Ranger District Name

National Park Service

Campground Name

Latitude (Decimal Degrees,NAD83)

Longitude (Decimal Degrees,NAD83)

(Link to convert from degrees.minutes.seconds to decimal degrees)

Additional description of site location (e.g. Park name, street address)

'*' = required information. Completion required before proceeding to next page.

Continue

International Tree Failure Database

- Web Site & Database Manager = Judy Adams, FHTET, Fort Collins, CO
- FHP Contacts:
  - R-1/4 = John Schwandt, Coeur d'Alene, ID
  - R-2 = Jim Worrall, Gunnison, CO
  - R-3 = Mary Lou Fairweather, Flagstaff, AZ
  - R-5 = John Pronos, Sonora, CA
  - R-6 = Diane Hildebrand, Portland, OR
  - R-8 = William Jones, Asheville, NC
  - R-9 = Joe O'Brien, St. Paul, MN
  - R-10 = Paul Hennon, Juneau, AK

International Tree Failure Database

- For more information or to express an interest in training to become a cooperator:
  - jpronos@fs.fed.us
  - (209) 532-3671 x242
  - http://ftcweb.fs.fed.us/natfdb