

# Forest Vegetation Simulator (FVS)

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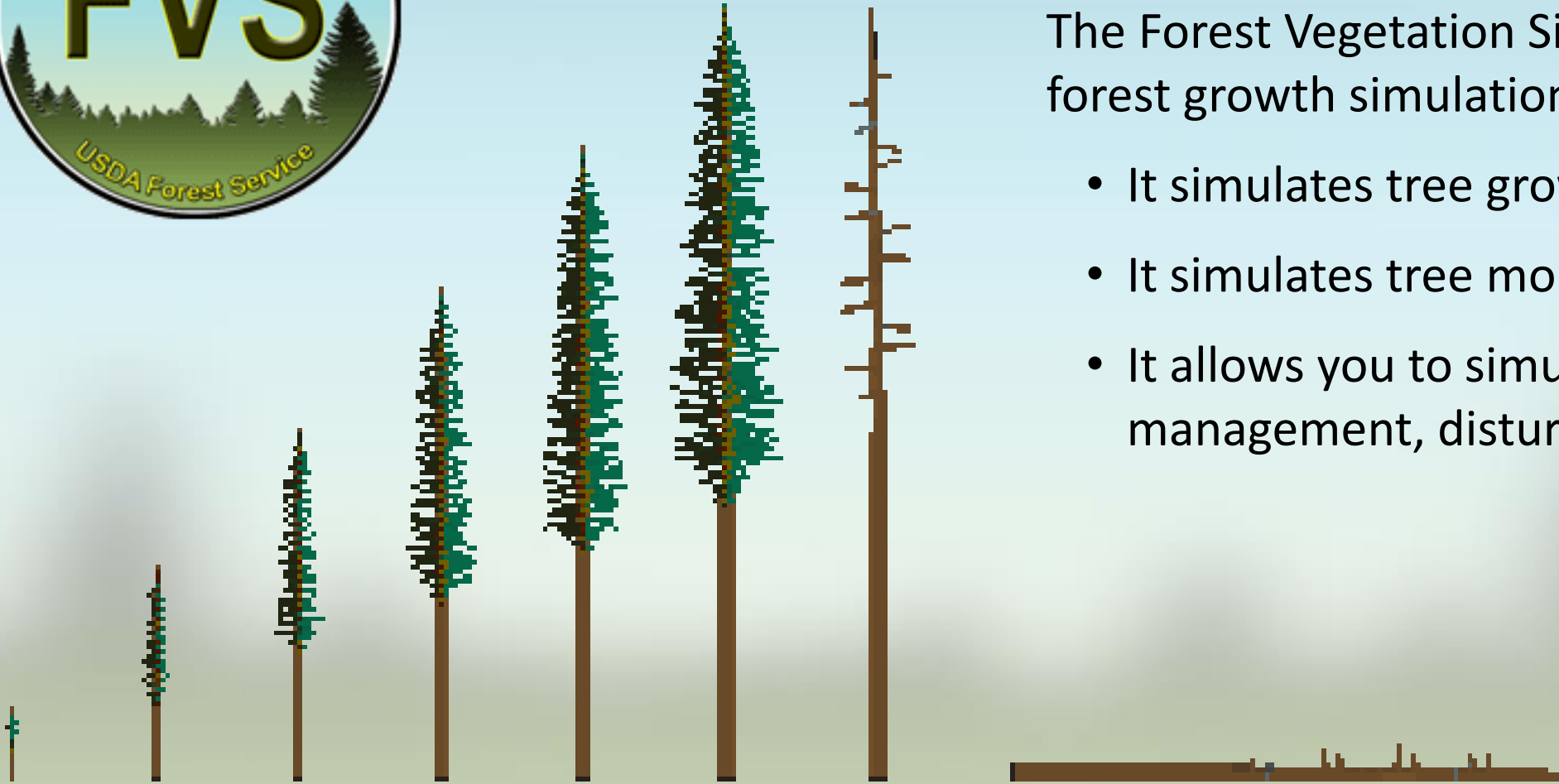




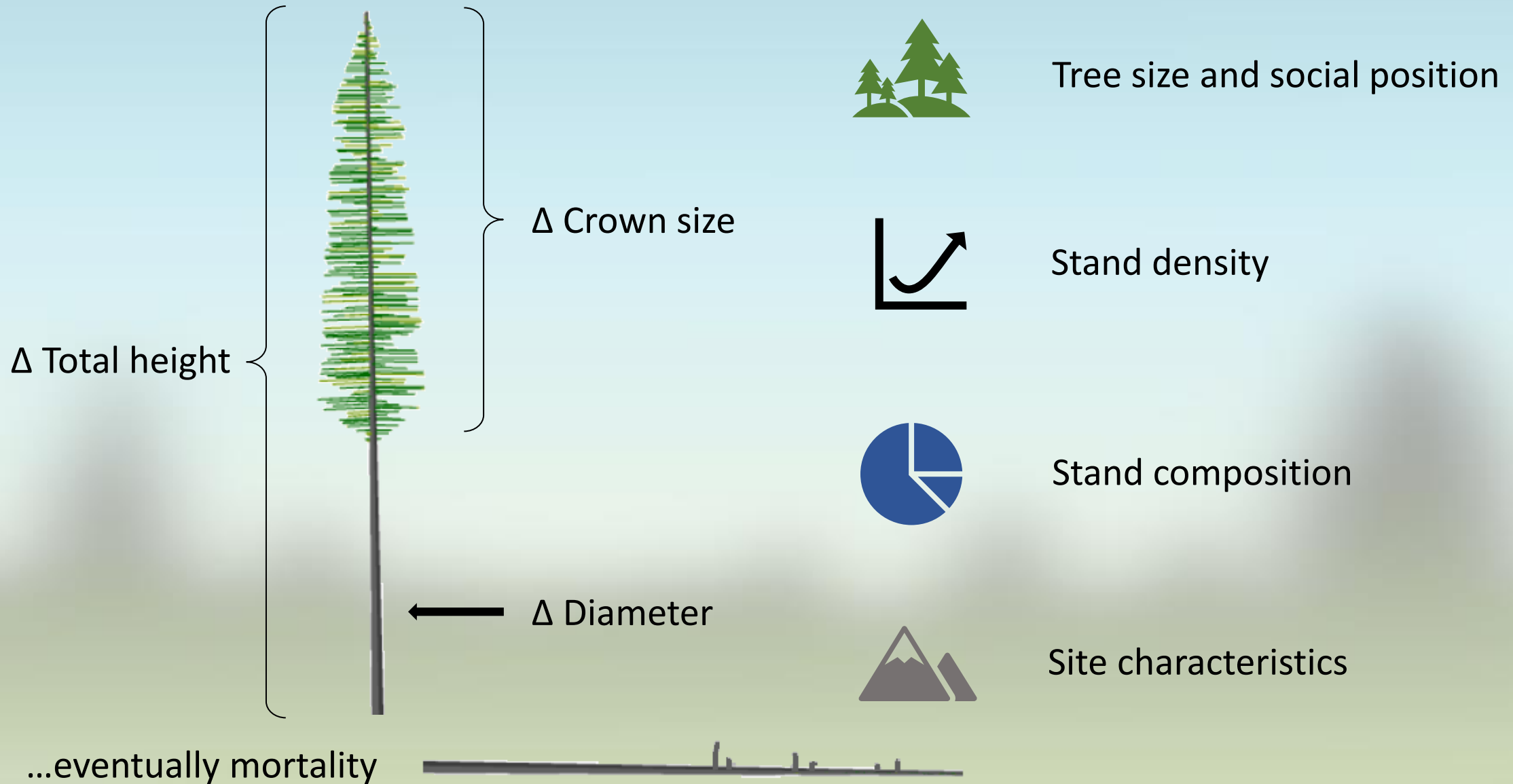
## What is FVS?

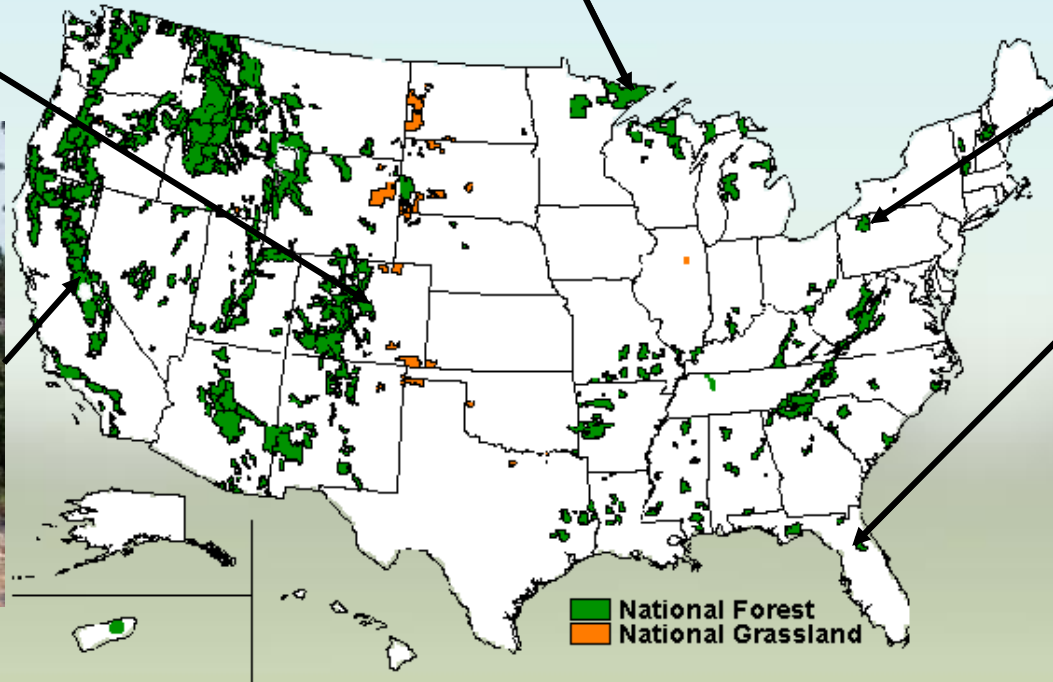
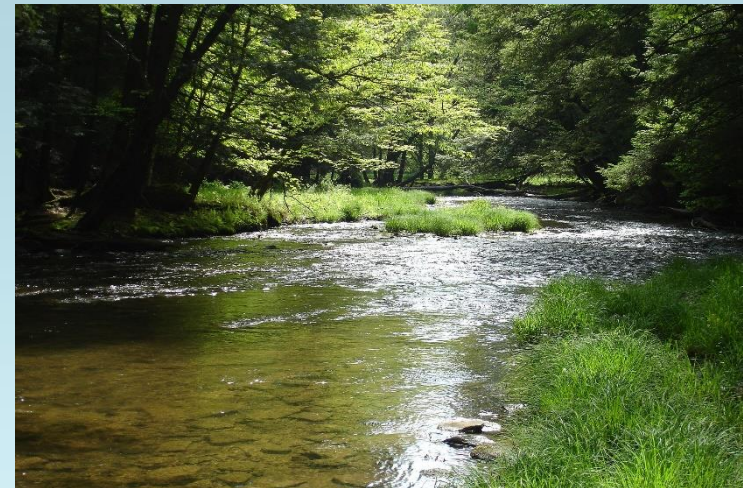
The Forest Vegetation Simulator (FVS) is a forest growth simulation tool.

- It simulates tree growth over time
- It simulates tree mortality over time
- It allows you to simulate management, disturbances, etc.



# Individual Tree Model





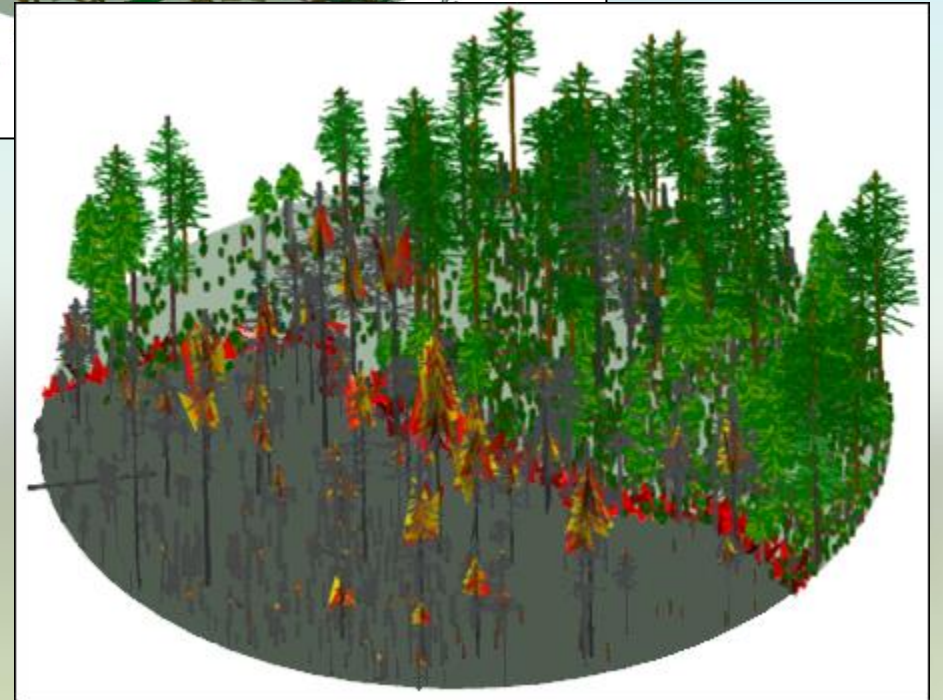
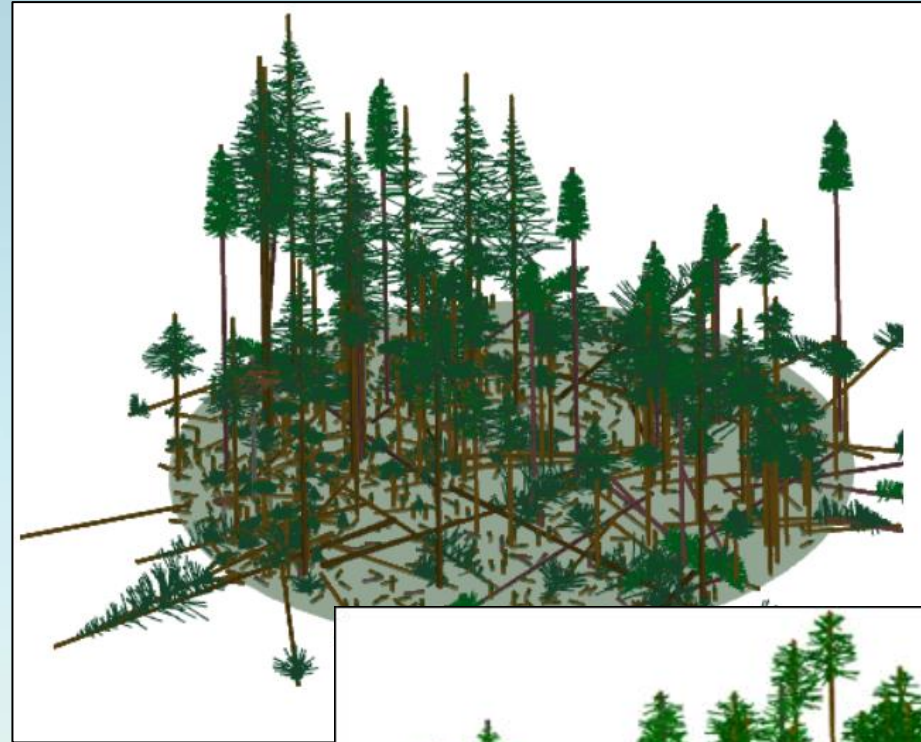
# Management and Disturbance

Evaluate wide range of management options including:

- Harvests and thinnings
- Planting
- Fuel treatments
- Prescribed fire

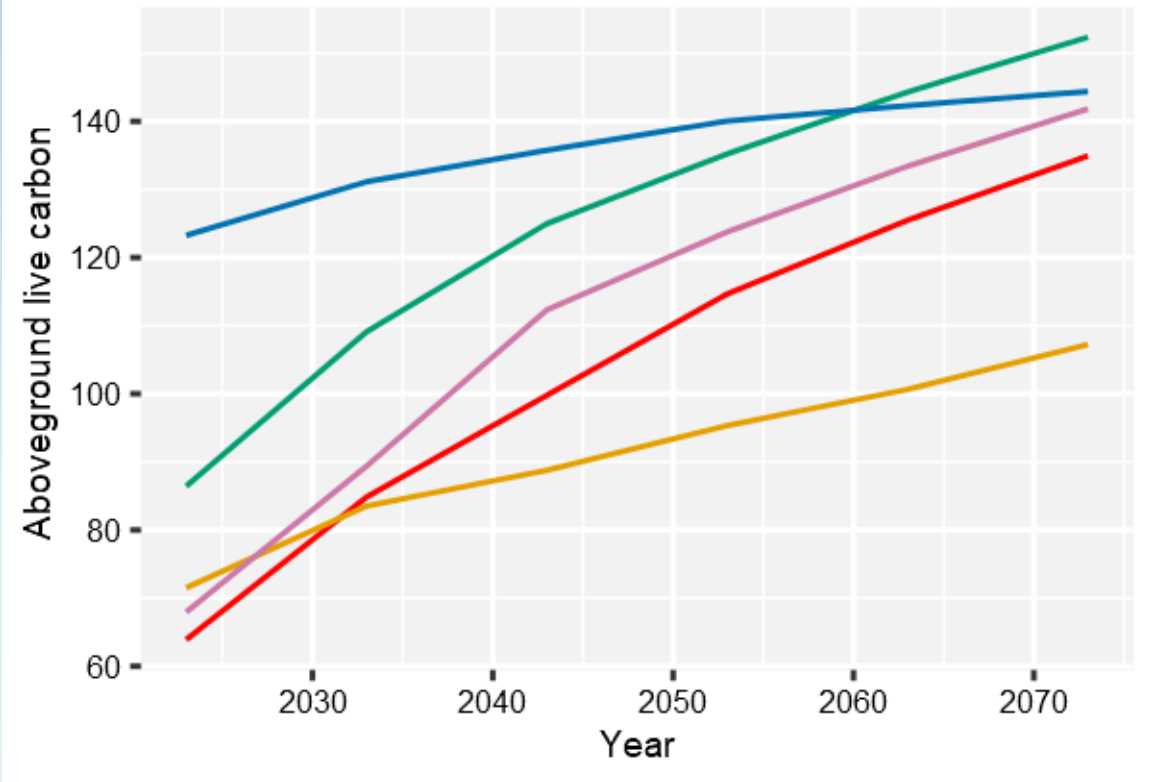
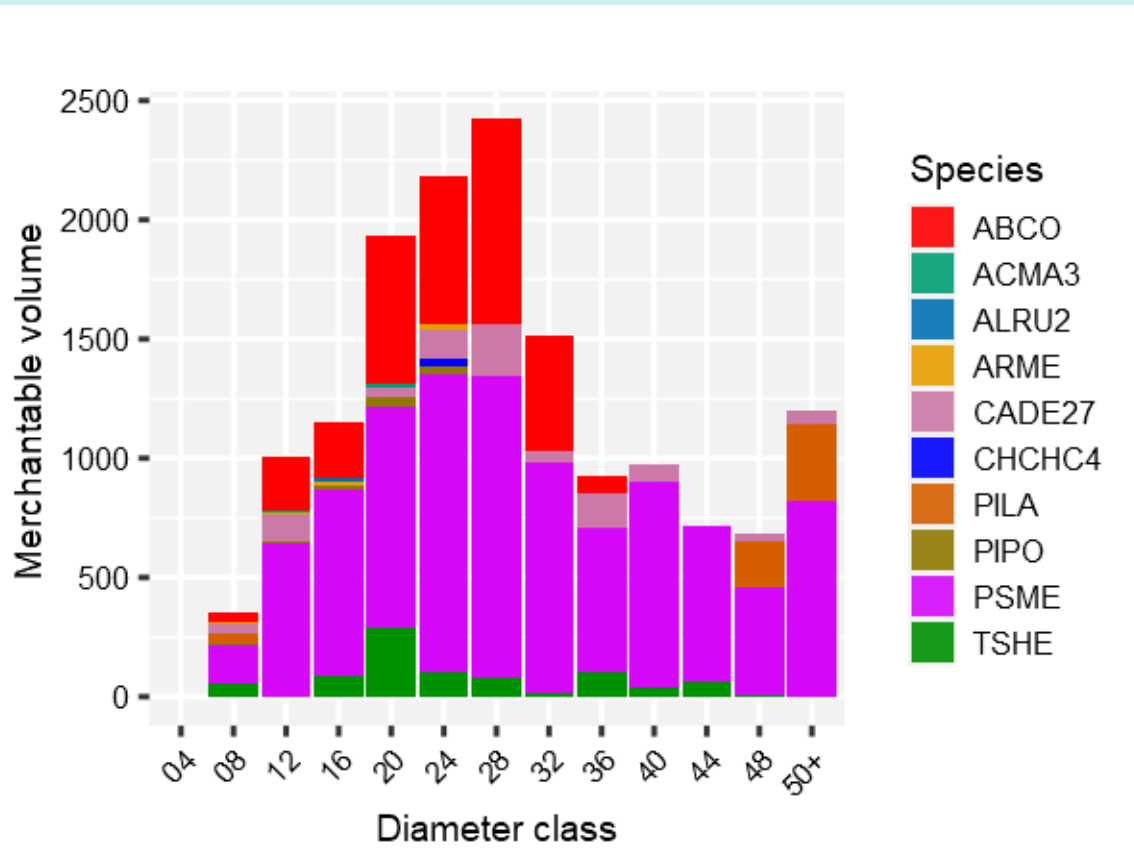
Assess impact of disturbance and environmental change

- Wildfires
- Insect and disease
- Climate change



# FVS Outputs

- Measures of stand composition and structure
- Volumes, biomass and carbon stocks



- Fuel loadings, snags, canopy cover, habitat conditions
- Fire, insect and pathogen hazard ratings
- And much more...

# Evaluate Alternatives

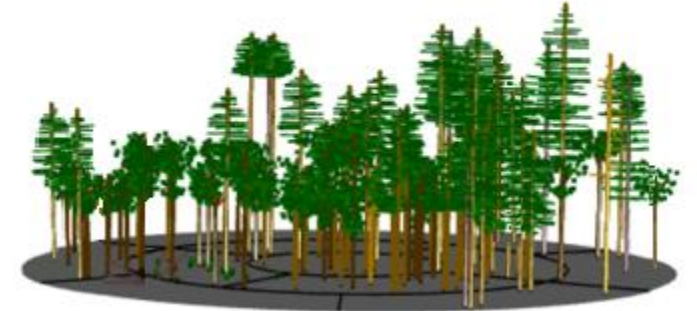
NO ACTION



PILE BURN

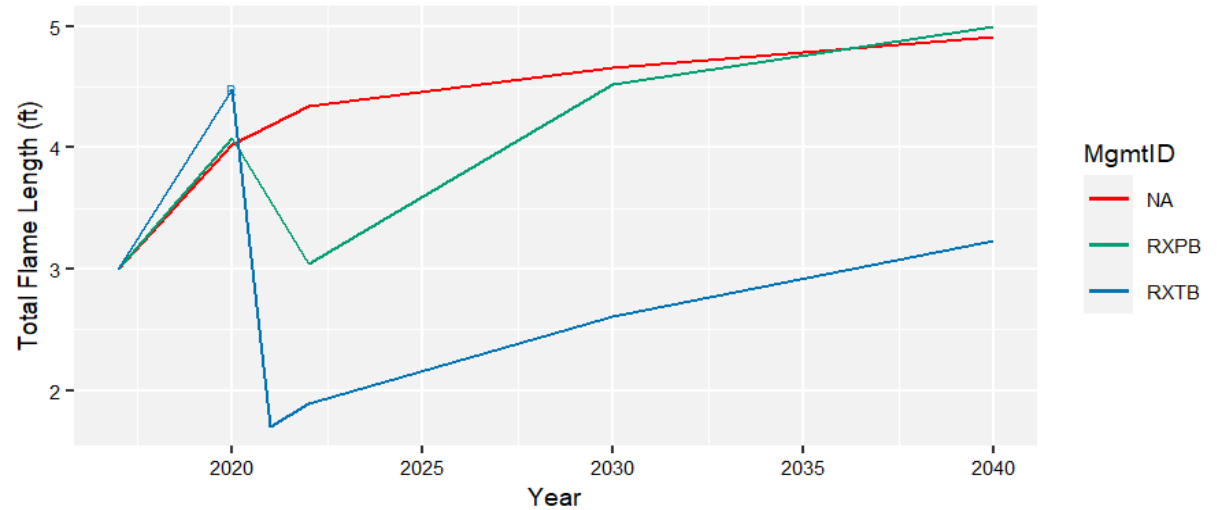


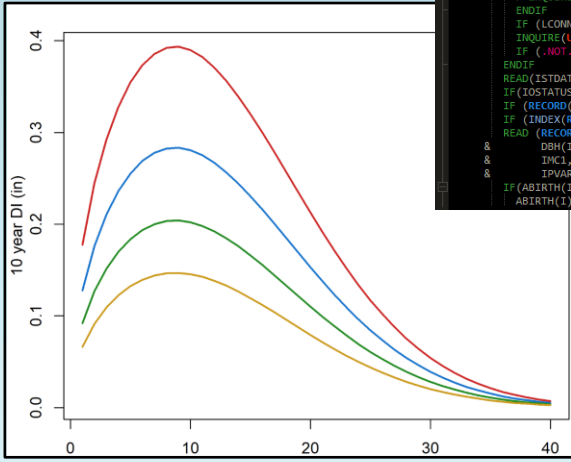
THIN FROM BELOW 80 BA  
RETAINING FIRE TOLERANT SPECIES



Stand Attributes	NA	RXPB	RXTB
	2022	2022	2022
Canopy Cover %	58	47	47
Flame Length (ft) Severe	4.3	3.0	1.9
Trees per Acre	158	142	115
Basal Area (ft <sup>2</sup> /acre)	110	91	81
Quadratic Mean Diameter (in)	11	11	11
Board feet	8176	7107	6228
Board feet removed	0	0	1970

Flame Length Under Severe (95%) Weather Conditions

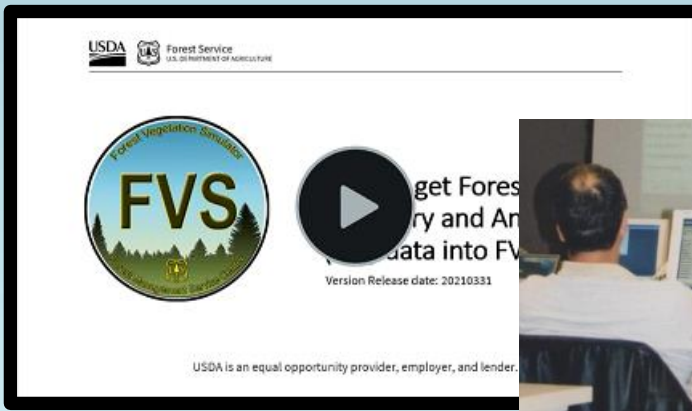




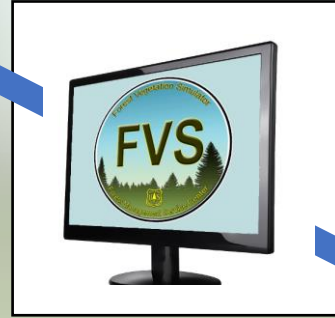
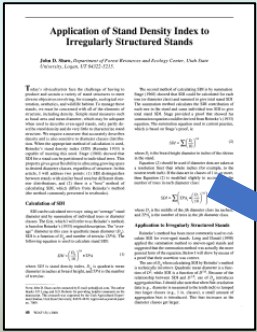
```

IF (DBSKODE.EQ.0) THEN
  IF (.NOT.LCONN) INQUIRE(UNIT=ISTDAT,exist=LCONN)
  IF (LCONN) INQUIRE(UNIT=ISTDAT,opened=LCONN)
  IF (.NOT.LCONN) THEN
    CALL FvsGetKeywordFileName(RECORD,len(RECORD),II)
    IF (RECORD.EQ.'') GOTO 900
    II=index(RECORD, ".h")
    IF (II == 0) II=index(RECORD, ".k")
    IF (II == 0) II=len_trim(RECORD)
    RECORD=TRIM(RECORD(:II-1))//".tre"
    INQUIRE(FILE=TRIM(RECORD),exist=LCONN)
    IF (.NOT.LCONN) THEN
      RECORD=TRIM(RECORD(:II-1))//".tre"
      INQUIRE(FILE=TRIM(RECORD),exist=LCONN)
    ENDIF
    IF (LCONN) OPEN(UNIT=ISTDAT,FILE=TRIM(RECORD),STATUS='OLD')
    INQUIRE(UNIT=ISTDAT,exist=LCONN)
    IF (.NOT.LCONN) GOTO 900
  ENDIF
  READ(ISTDAT, '(A)', IOSTAT=IOSTATUS) RECORD
  IF (IOSTATUS.NE.0) GOTO 900
  IF (RECORD(1:1).EQ.***) GOTO 31
  IF (INDEX(RECORD, "-999") .GT. 0) GOTO 900
  READ (RECORD, TRFM) ITREI, IDTREE(1), PROB(1), ITH, CSPT,
    & DBH(1), DG(1), HT(1), TH, HTG(1), ICR(1), (IDAMPD(J), J=1,6),
    & IPCL, KUTROD(1), IPVARS(1), IPVARS(2), IPVARS(3), IPVARS(4),
    & TPVARS(5), ABIRTH(1)
  IF (ABIRTH(1).LE.0) THEN
    ABIRTH(1) = 0
  
```

# Model Development and Maintenance

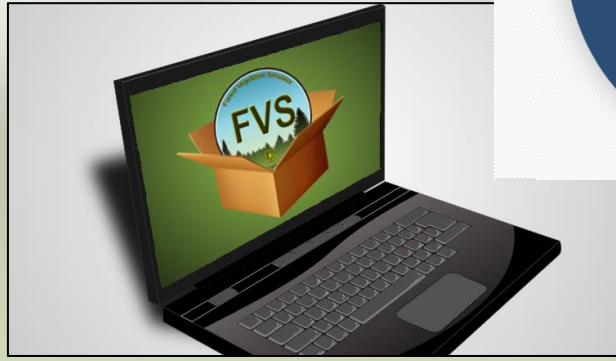


# Training

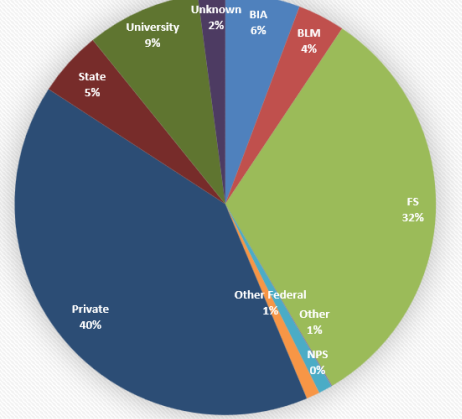


# Technology Transfer

# User Support



FVS Helpdesk Support in FY 2024 by Organization





# FVS moving forward...



Nationally consistent growth, mortality and regeneration models developed from contemporary data sources and methodology



The ability to integrate climate sensitivity into base FVS relationships in a nationally consistent manner



A more easily maintainable and updatable code base and software system

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FOREST SERVICE HOME » FOREST VEGETATION SIMULATOR (FVS)

### Forest Vegetation Simulator

Home

What is FVS?

Software

Documents

Training

Support

## Forest Vegetation Simulator (FVS)

### Modeling the Forest

The Forest Vegetation Simulator (FVS) is a forest growth simulation model. It simulates forest vegetation change in response to natural succession, disturbances, and management. It recognizes all major tree species and can simulate nearly any type of management or disturbance at any time during the simulation. Outputs include tree volumes, biomass, density, canopy cover, harvest yields, fire effects, and much, much more.

**FVS Newsletters**  
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#### Software

FVS is a suite of software programs. Obtain the complete package or any of its various components. [Get FVS software...](#)

#### Documents

FVS documents include a variety of newsletters, users guides, manuals, and technical reports. [Browse the FVS documents...](#)

#### Training

FVS training includes self-paced training, instructor-led training, and web-based training. [Read more about FVS training...](#)

#### Support

The FVS Support Staff provides technical support for the Forest Vegetation Simulator. [Get FVS support...](#)

## FS Web:

[www.fs.usda.gov/fvs](http://www.fs.usda.gov/fvs)

- Official Software Package
- Documents
- Training
- Support

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USDAForestService / ForestVegetationSimulator

Code Issues Pull requests Actions Projects Wiki Security Insights

The README Project  
GitHub community articles

main 4 Branches 20 Tags

Repositories

Repository	Description	Updated	Commits
.github	Trending Create CODEOWNERS	2 years ago	1,555 Commits
acd	Collections restructure of main branch	2 years ago	
ak	Reverting sitset to 2023 Q3 status	9 months ago	
archive	Updated all grohed.f files to be compatible with char8 SVN ...	2 years ago	
base	Q4 lance updates (#76)	2 months ago	
bin	Q4 lance updates (#76)	2 months ago	
bm	Reverting sitset to 2023 Q3 status	9 months ago	
ca	Reverting sitset to 2023 Q3 status	9 months ago	
canada	Added testing of the fvs[Get/Set]SpeciesAttr code.	last year	
changeNotes	Refactor of balmod to prevent underflow in EXP() function	5 months ago	
cd	Reverting sitset to 2023 Q3 status	9 months ago	
clim	restructure of main branch	2 years ago	
common	Update INCLUDESVN.F77	2 months ago	

About

Forest Vegetation Simulation (FVS) - Growth and Yield Modeling software

modeling vegetation forestry carbon biomass fire-effects

Readme

View license

Security policy

Activity

Custom properties

41 stars

11 watching

26 forks

Report repository

Releases

FVS20240930 FS2024.4 (Latest)

last week

+ 7 releases

## GitHub:

[USDAForestService/ForestVegetationSimulator: Forest Vegetation Simulation \(FVS\) - Growth and Yield Modeling software](https://github.com/USDAForestService/ForestVegetationSimulator)

- Open Source Code
- Wiki