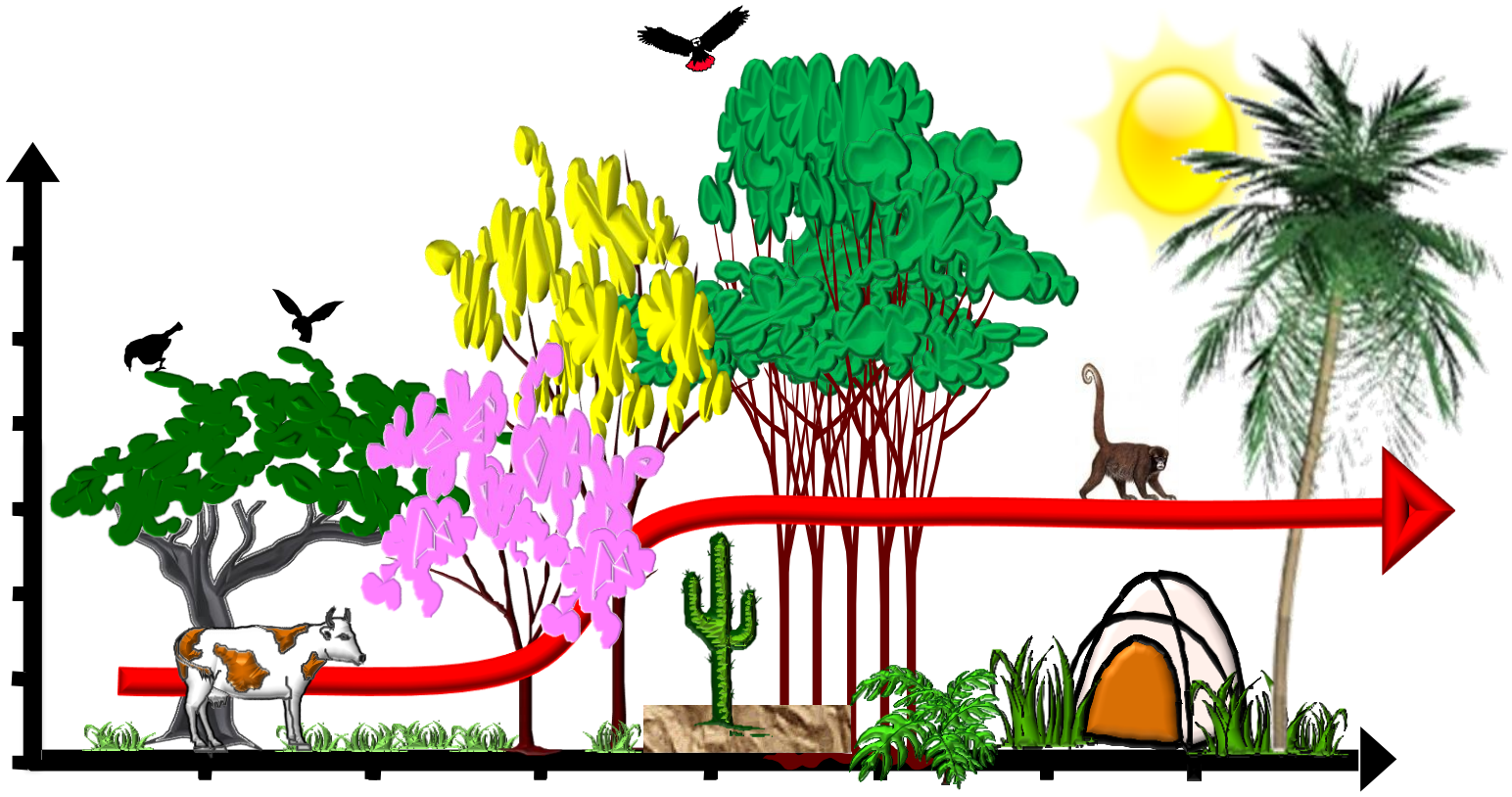
# The journey of a forestry consultant

WORLD FORESTRY CENTER

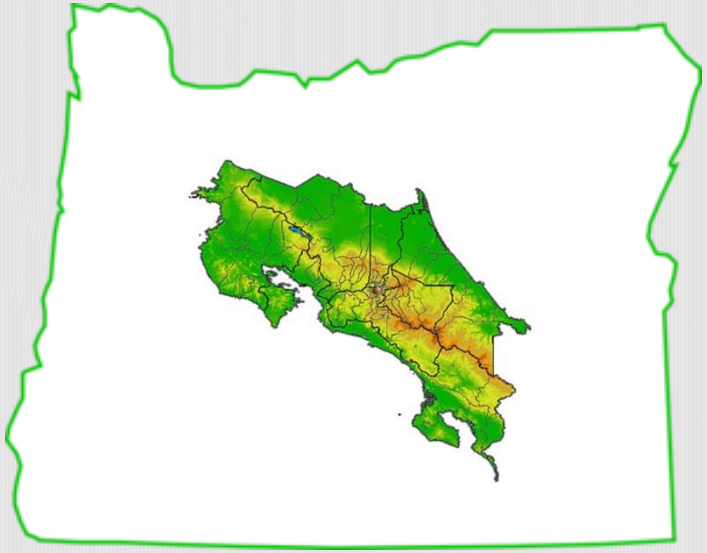
World Forest Institute




**Rodolfo J. Vieto, M.Sc**

**Forester**
**Forestry Economist**

**International Fellow from Costa Rica**
**World Forestry Center**
**2019**



# Republic of Costa Rica

## Area:

- Oregon 99K Miles²
- Costa Rica 20K Miles² (1/5)

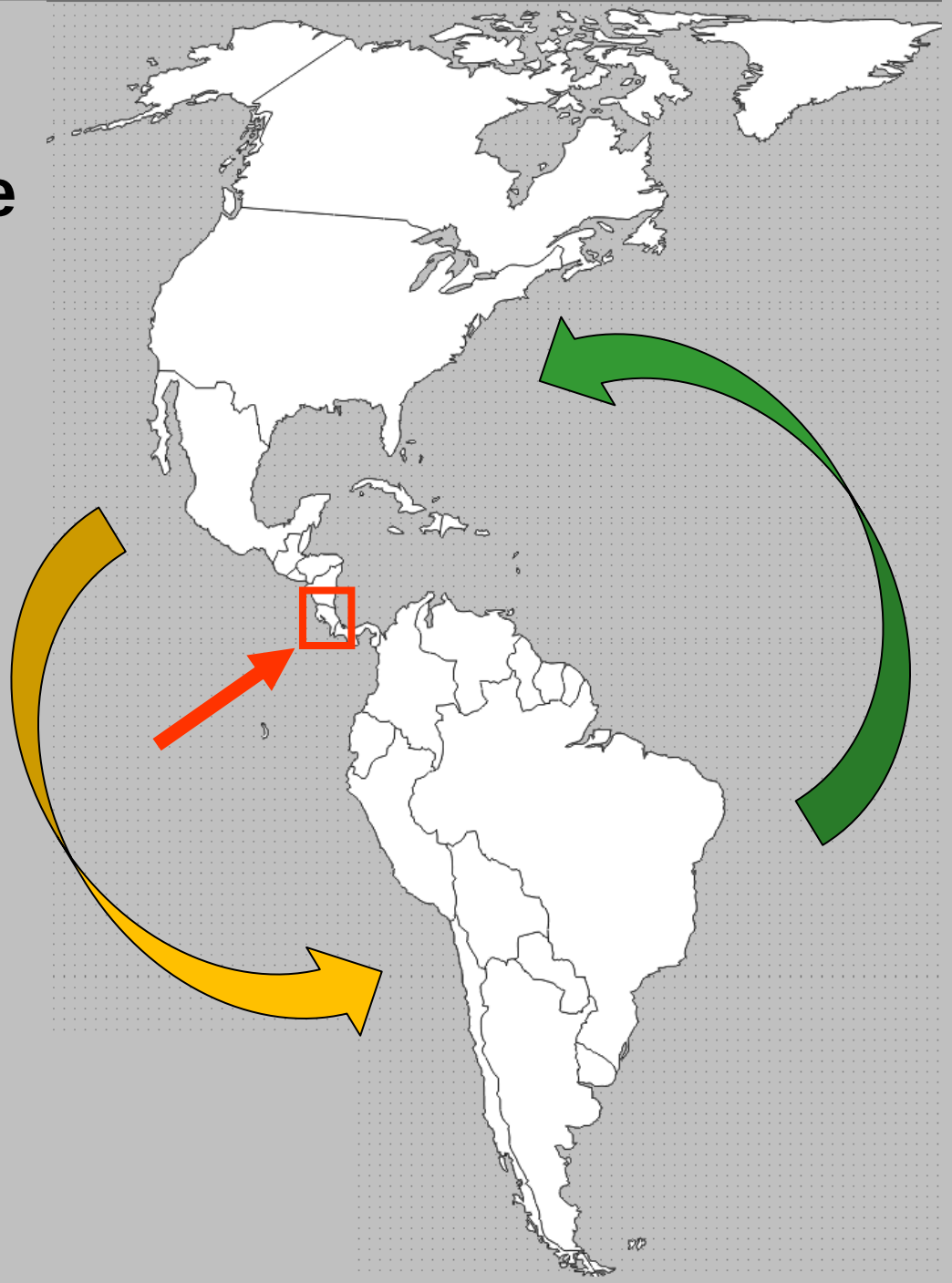
## Population Density:

- Oregon 40 Hab /Mile² (2018)
- Costa Rica 250 Hab/ Mile² (2017) 6.25x

## Interesting Facts:

- Most stable democracy in LatAm (130+ years)
- Abolished its own army (1948)
- Developed a green economy in the last 3 decades
  - Basis for a successful nature-based tourism industry

# Biological bridge



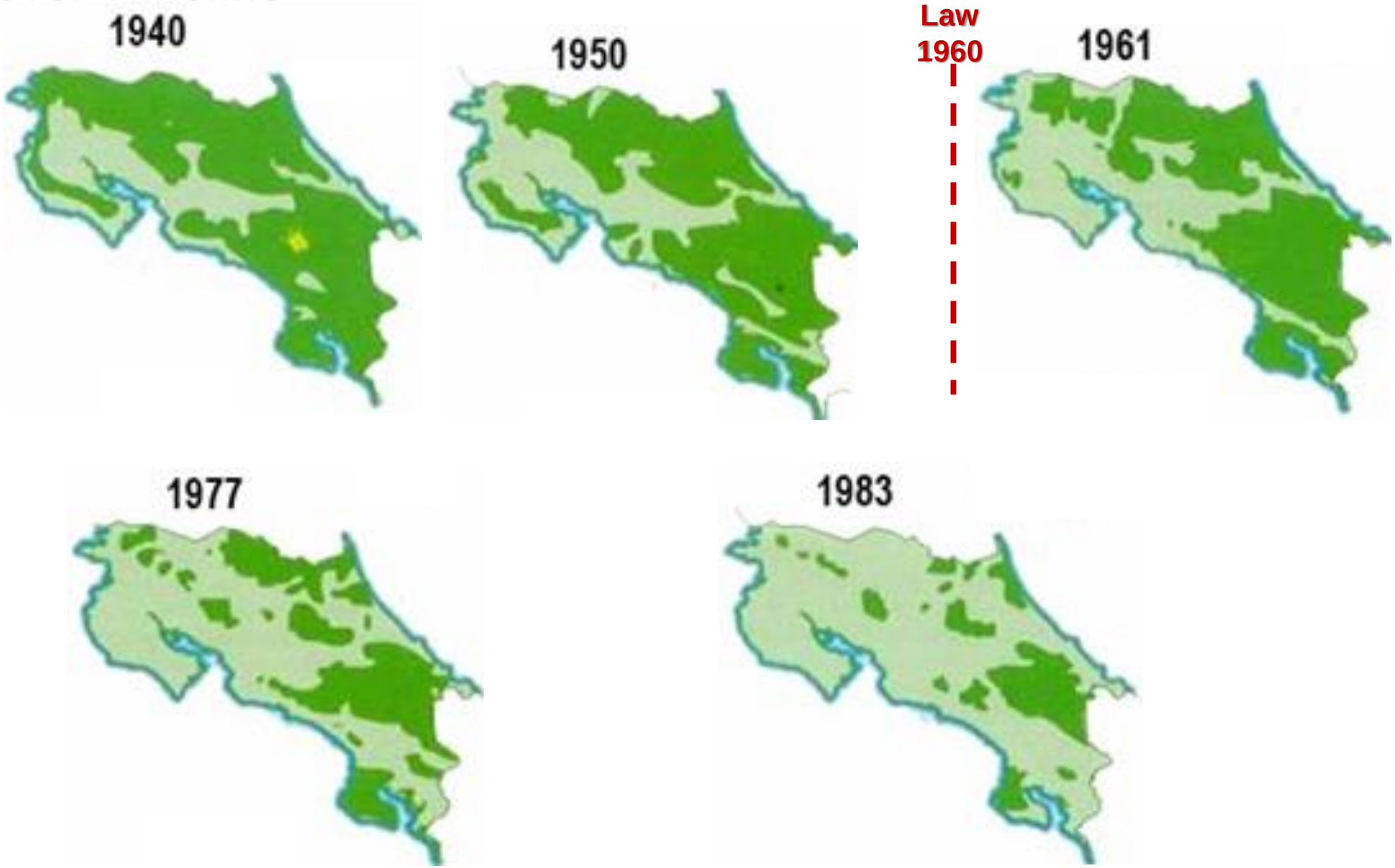

± 6,5% of the number of species in the world
in 0.03% of the world's continental surface

# Costa Rica Dense Natural Forest Cover Timeline

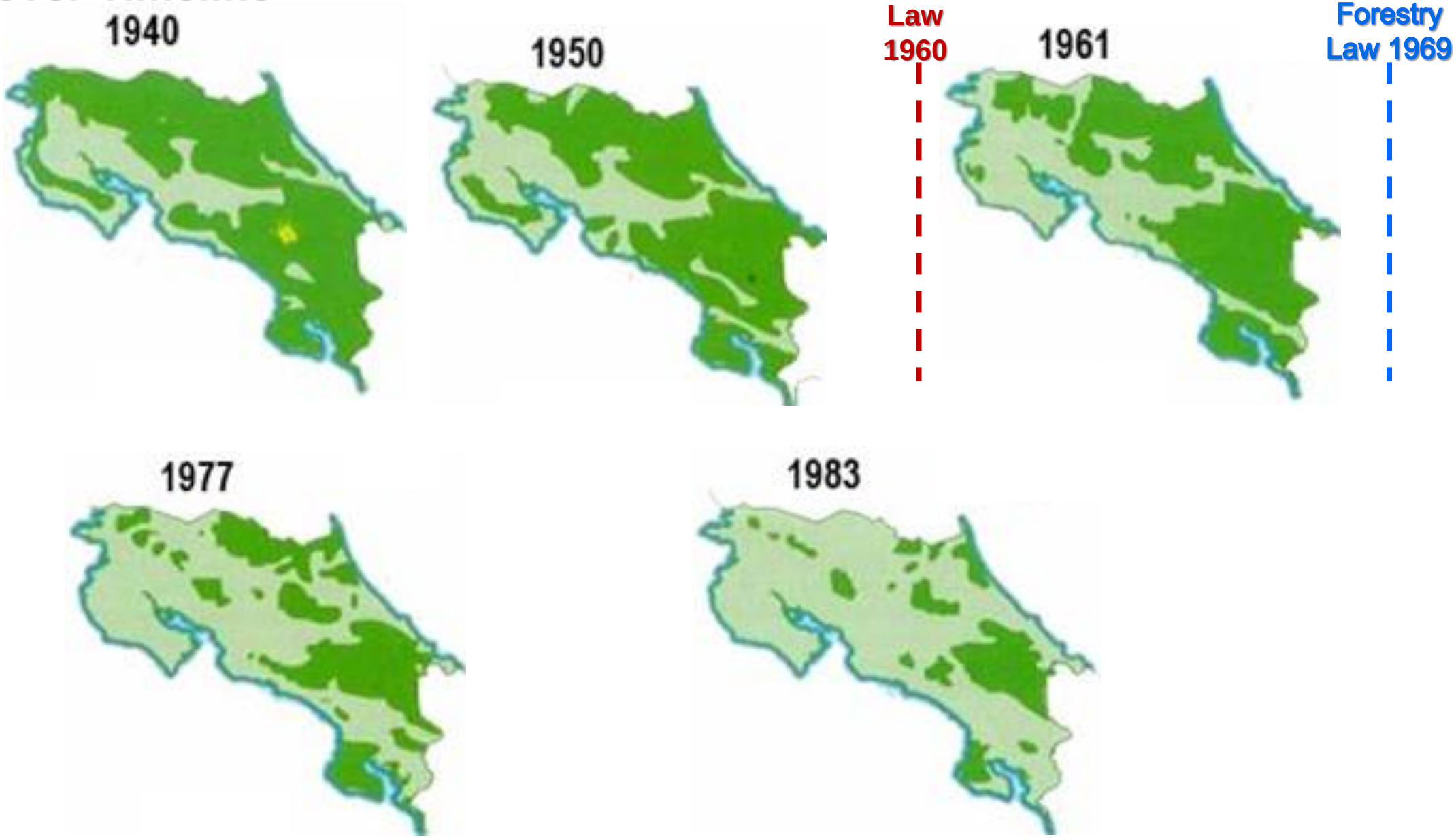




# Costa Rica Dense Natural Forest Cover Timeline



# Costa Rica Dense Natural Forest Cover Timeline



# Costa Rica Dense Natural Forest Cover Timeline



Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's


# Costa Rica Dense Natural Forest Cover Timeline



Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's

Forestry Schools 1975-76


# Costa Rica Dense Natural Forest Cover Timeline

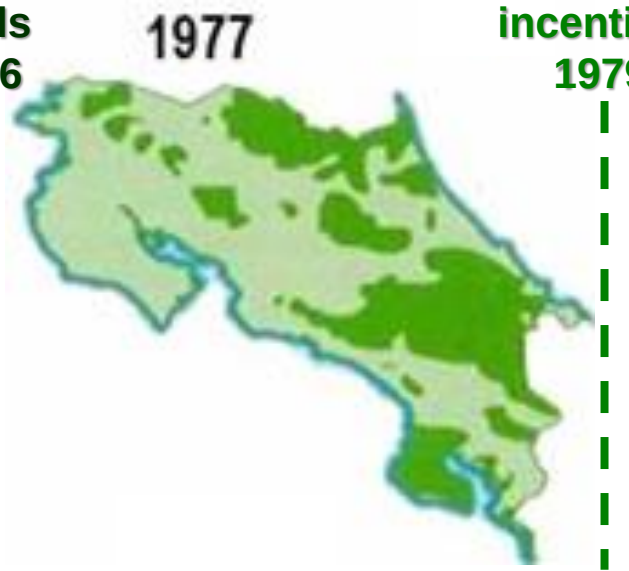


Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's

Forestry Schools 1975-76




Reforestation incentives 1979

# Costa Rica Dense Natural Forest Cover Timeline

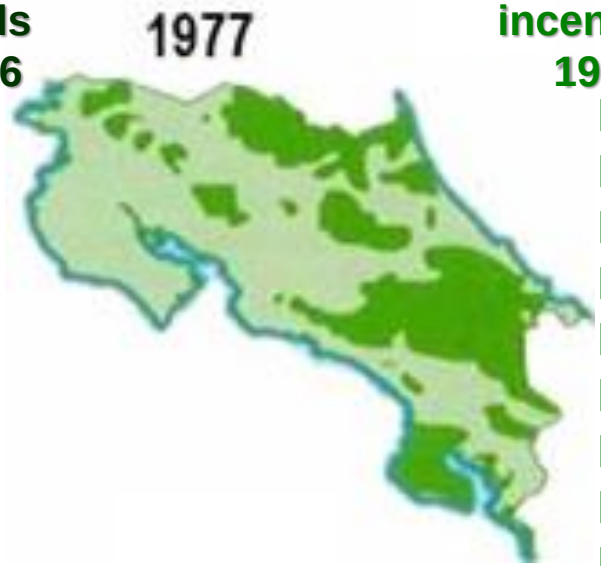


Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's

Forestry Schools 1975-76




Reforestation incentives 1979

ITCR-1980

# Costa Rica Dense Natural Forest Cover Timeline

1940

1950

Homestead Law 1960

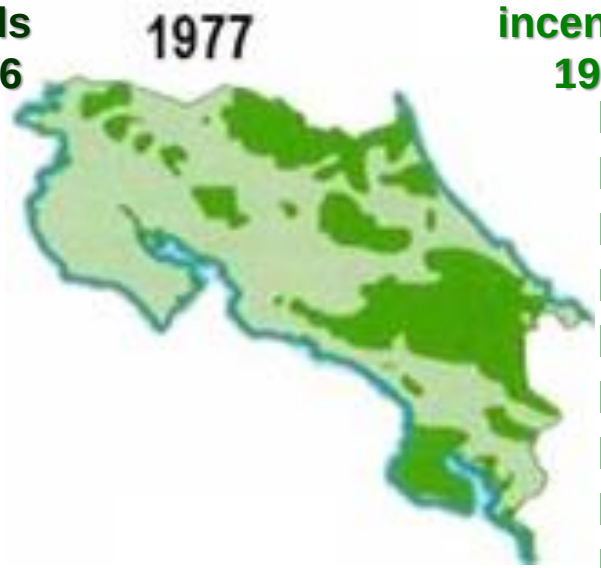
1961

First Forestry Law 1969

National Parks Early 70's

Forestry Schools 1975-76

1977



Reforestation incentives 1979

ITCR-1980

Eco-tourism Early 80's

1983

# Costa Rica Dense Natural Forest Cover Timeline

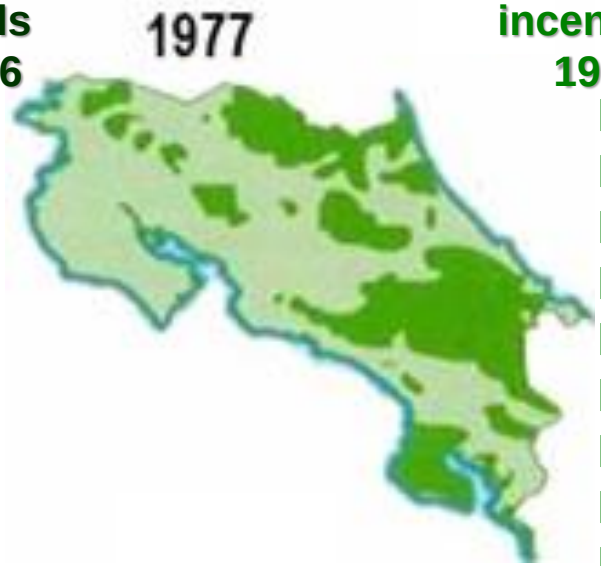


Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's

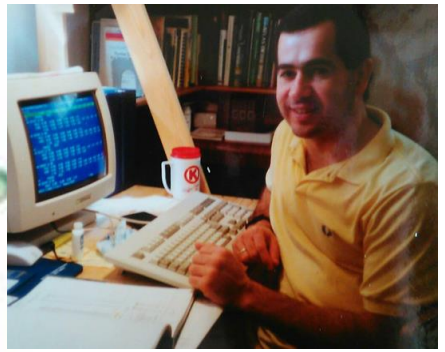
Forestry Schools 1975-76




Reforestation incentives 1979

ITCR-1980

Eco-tourism Early 80's

U of Idaho 1989

# Costa Rica Dense Natural Forest Cover Timeline

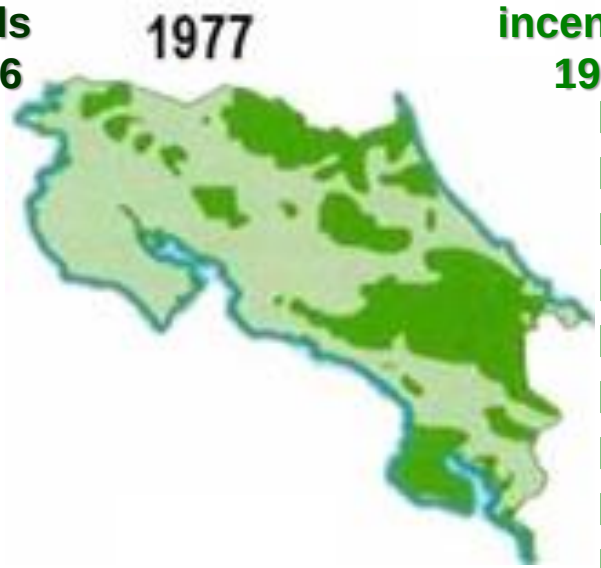


Homestead Law 1960


First Forestry Law 1969

National Parks Early 70's

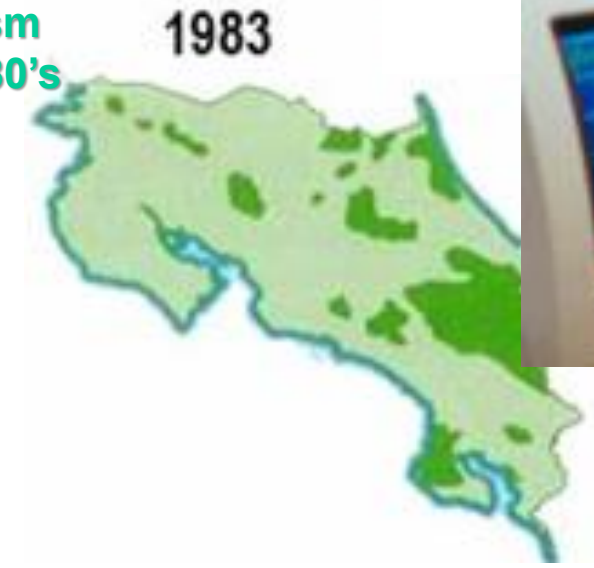
Forestry Schools 1975-76

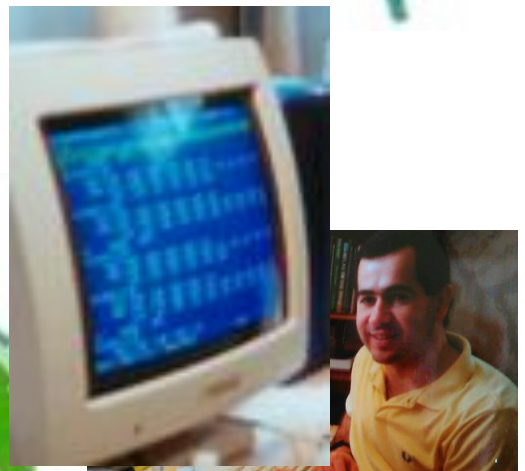



Reforestation incentives 1979

ITCR-1980

Eco-tourism Early 80's



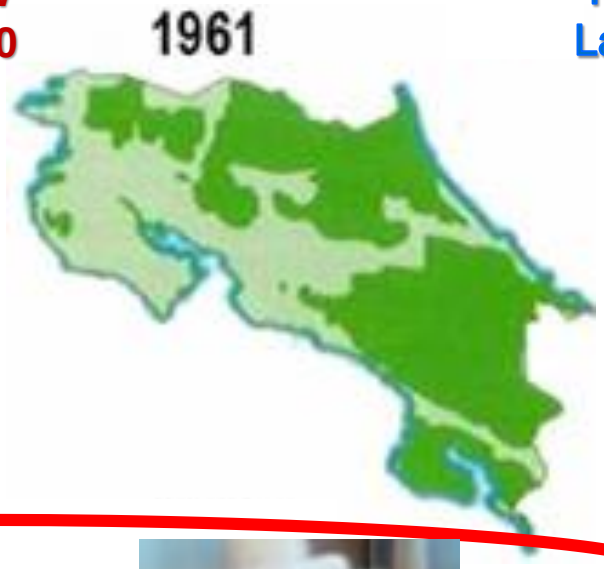


U of Idaho 1989

# Costa Rica Dense Natural Forest Cover Timeline



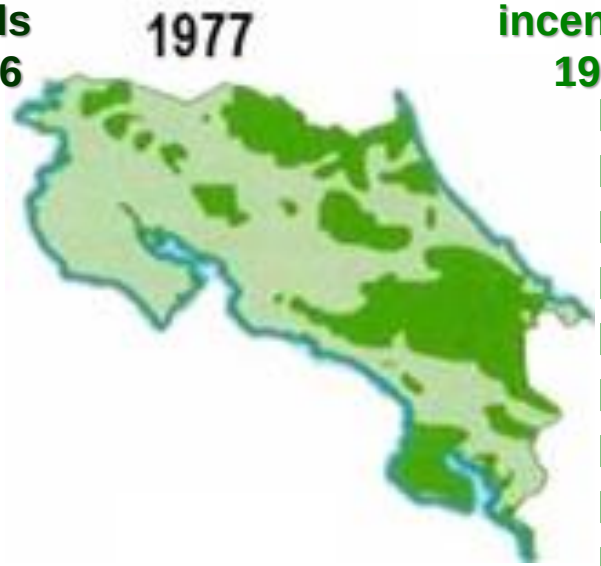
Homestead Law 1960




First Forestry Law 1969

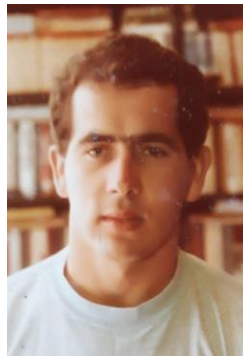
National Parks Early 70's

Forestry Schools 1975-76




Reforestation incentives 1979

Eco-tourism Early 80's

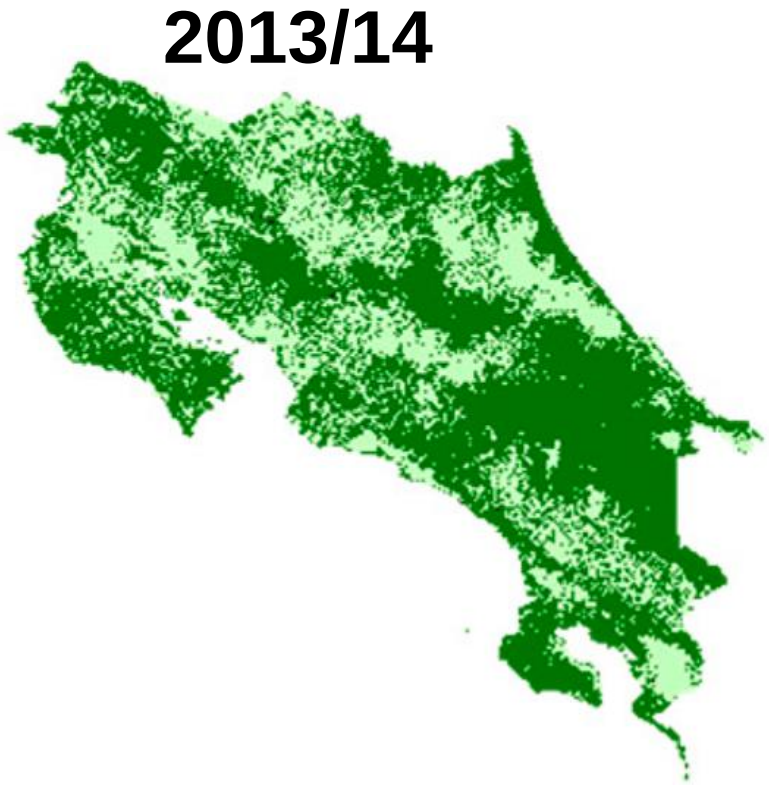


ITCR-1980


Payment for Environmental Services 1996



U of Idaho 1989


**Costa Rica practically doubled its forest cover in the last 30 years**

# Current versus potential condition of forests in Central America

## Current condition of Central American forests and woodlands


- Intact
- Fragmented/managed
- Degraded
- Deforested

## Potential extent of Central American forests and woodlands


- Closed forests (canopy cover >45%)
- Open forests (canopy cover 25-45%)
- Woodlands (canopy cover <25%)

**Source: WRI.org**

# Current versus potential condition of forests in Central America

## Current condition of Central American forests and woodlands


- Intact
- Fragmented/managed
- Degraded
- Deforested

## Potential extent of Central American forests and woodlands


- Closed forests (canopy cover >45%)
- Open forests (canopy cover 25-45%)
- Woodlands (canopy cover <25%)

**Source: WRI.org**

OptiForest

# Forestry plantation investments

# Forestry plantation investments

-$

Time

± 20 years

# Forestry plantation investments

-$

Time

± 20 years

# Forestry plantation investments

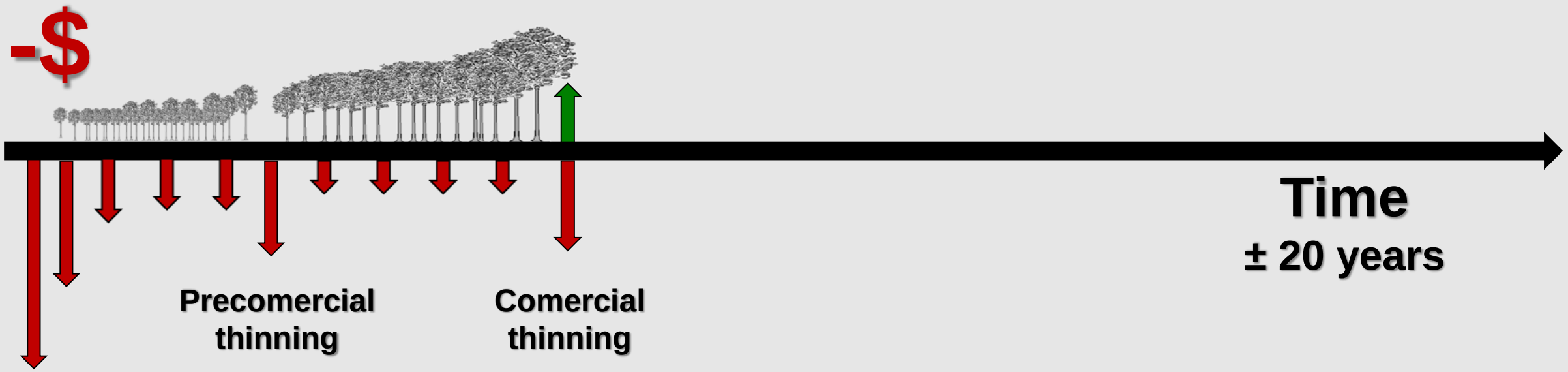
-$

Time

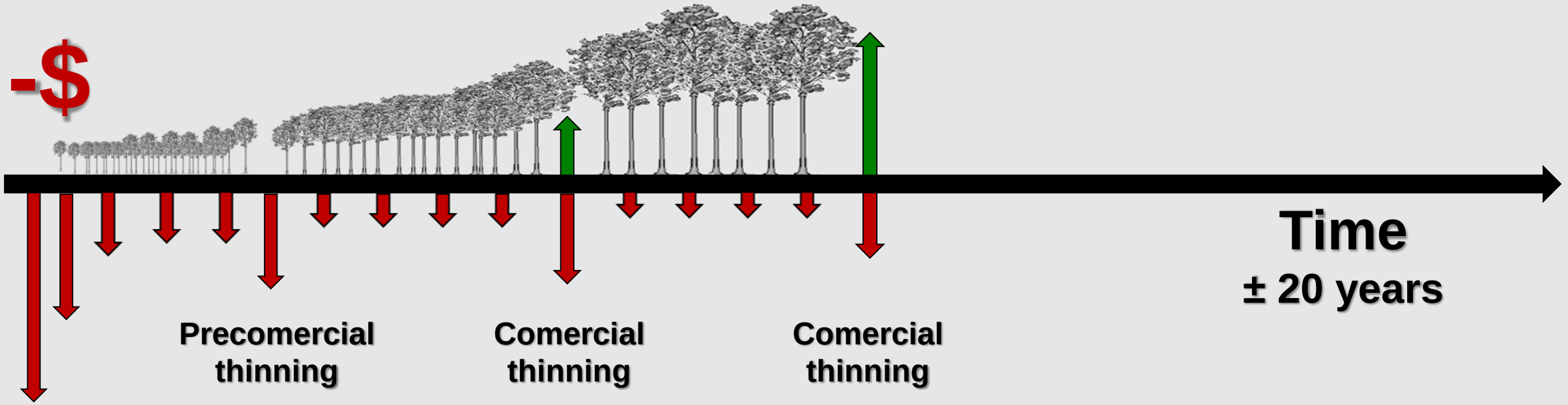
± 20 years

# Forestry plantation investments

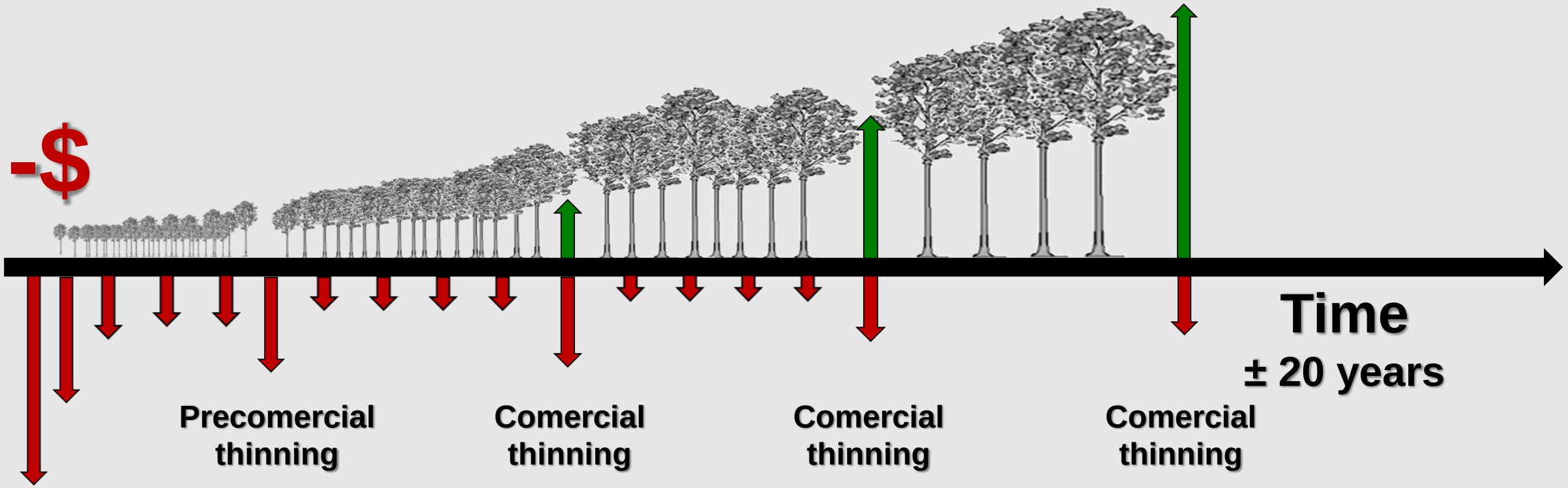
# Forestry plantation investments



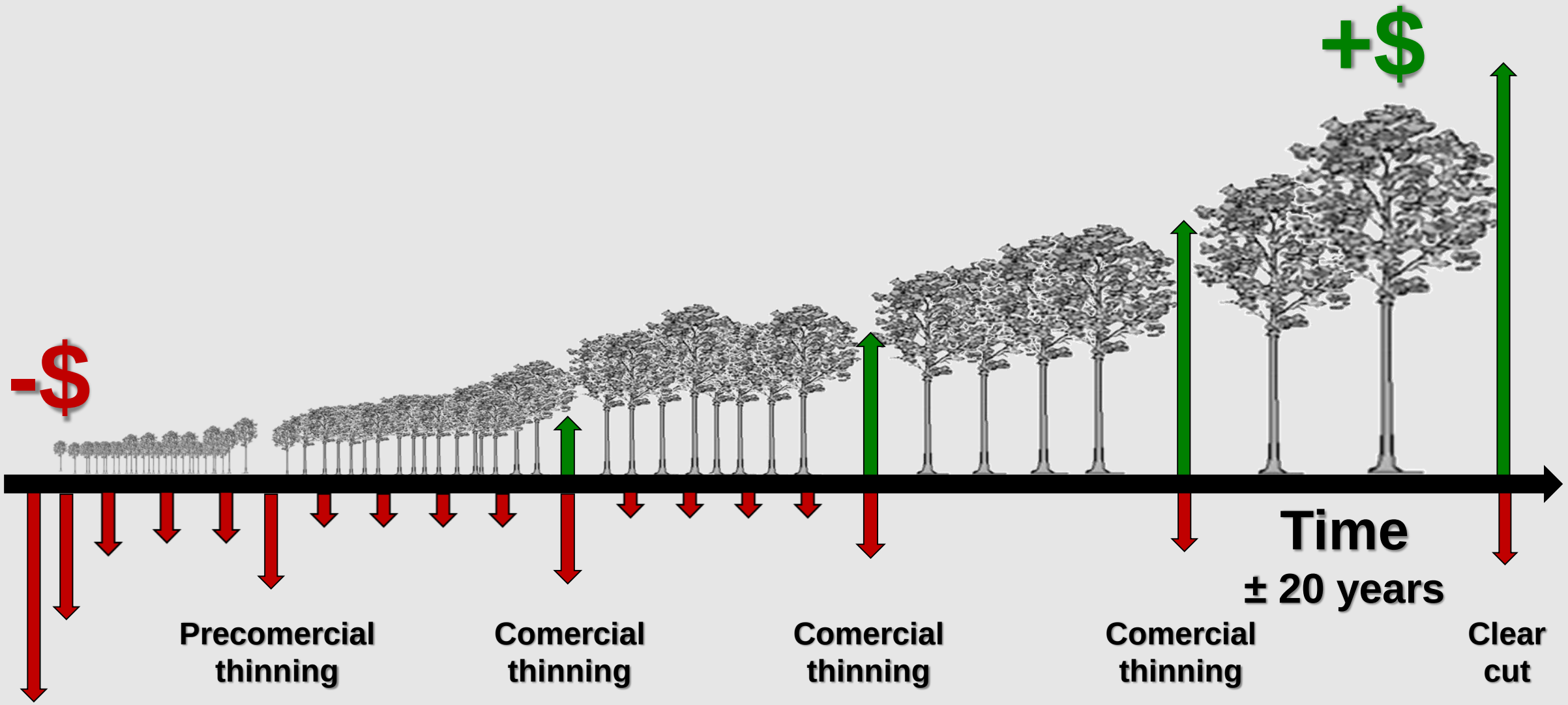
# Forestry plantation investments



# Forestry plantation investments

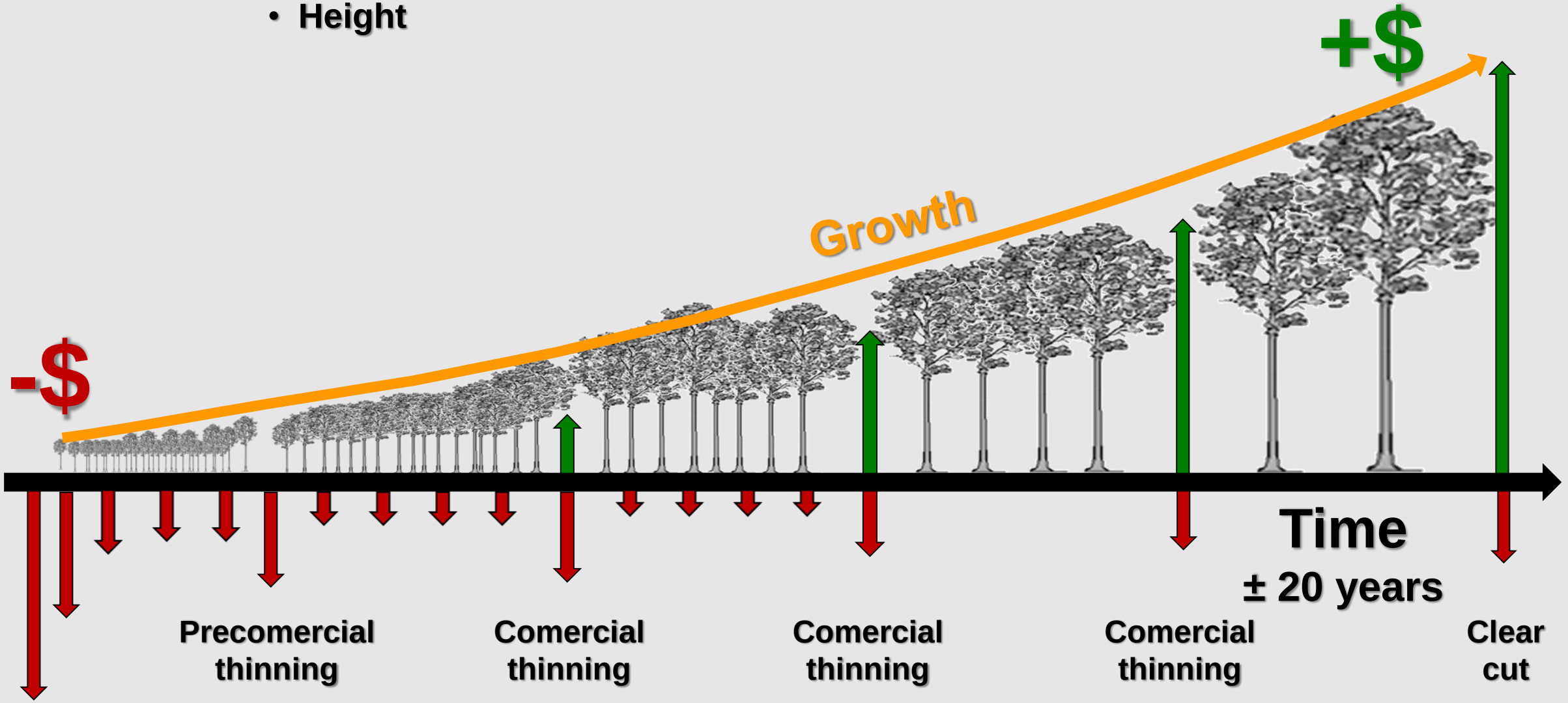


# Forestry plantation investments



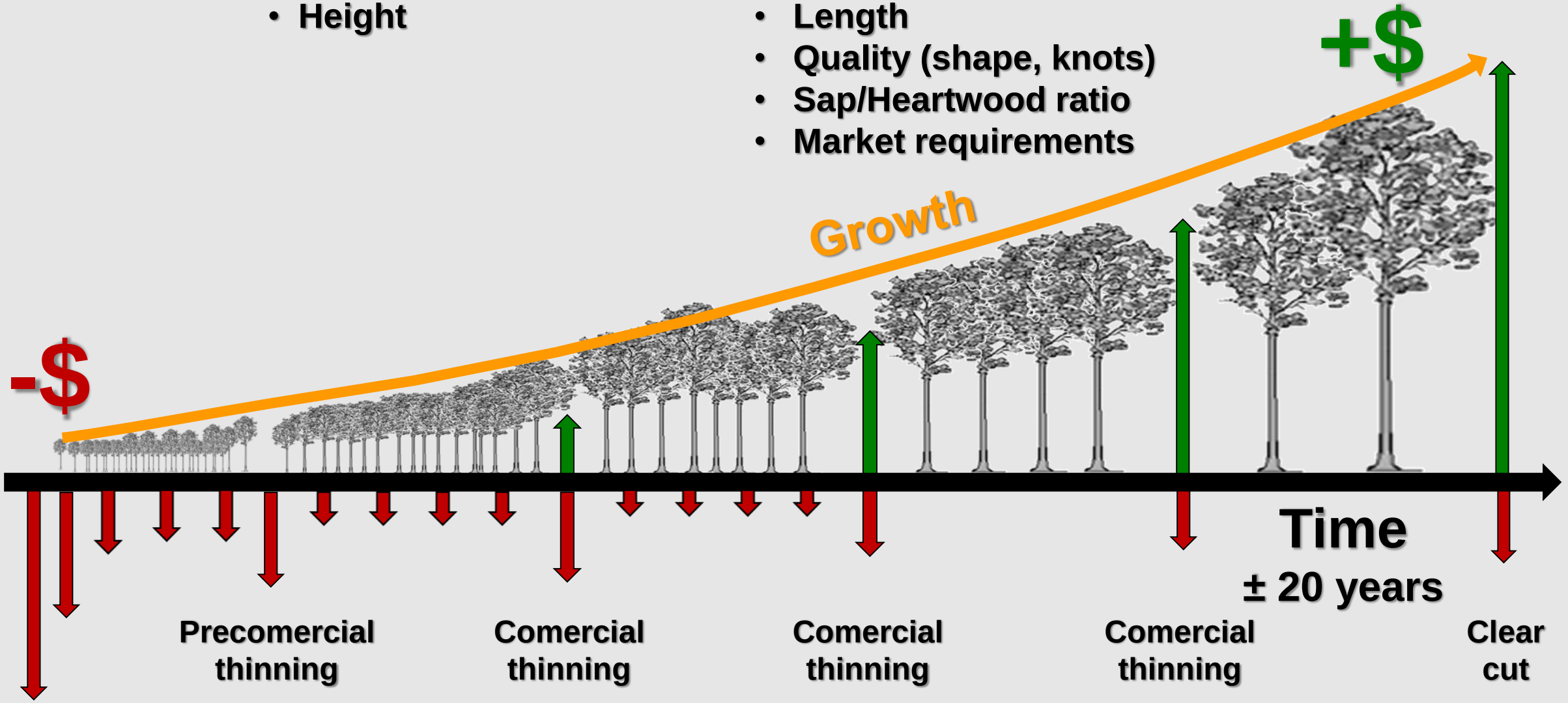
# Forestry plantation investments

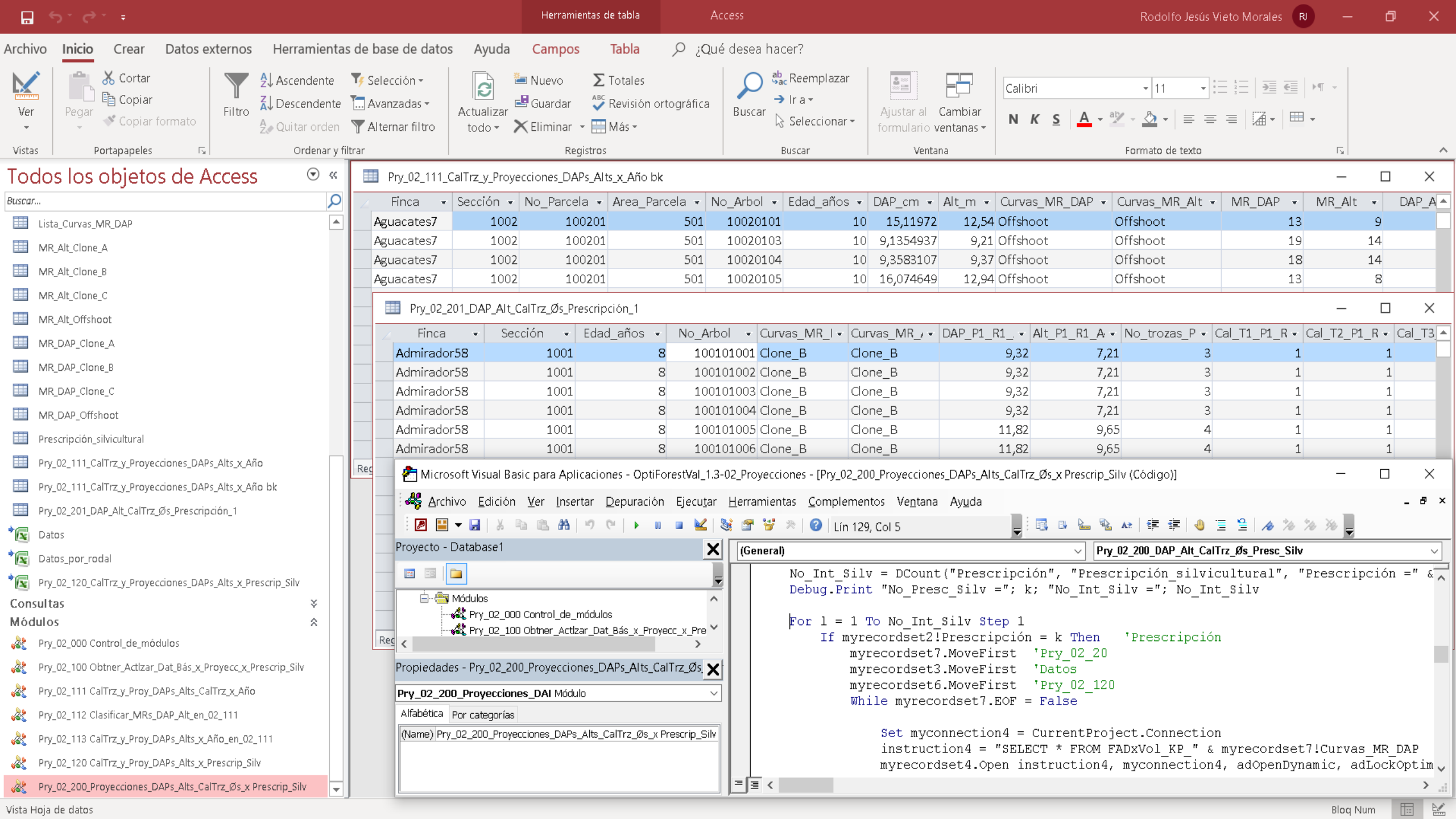
- **Growth:**
  - **Diameter**
  - **Height**

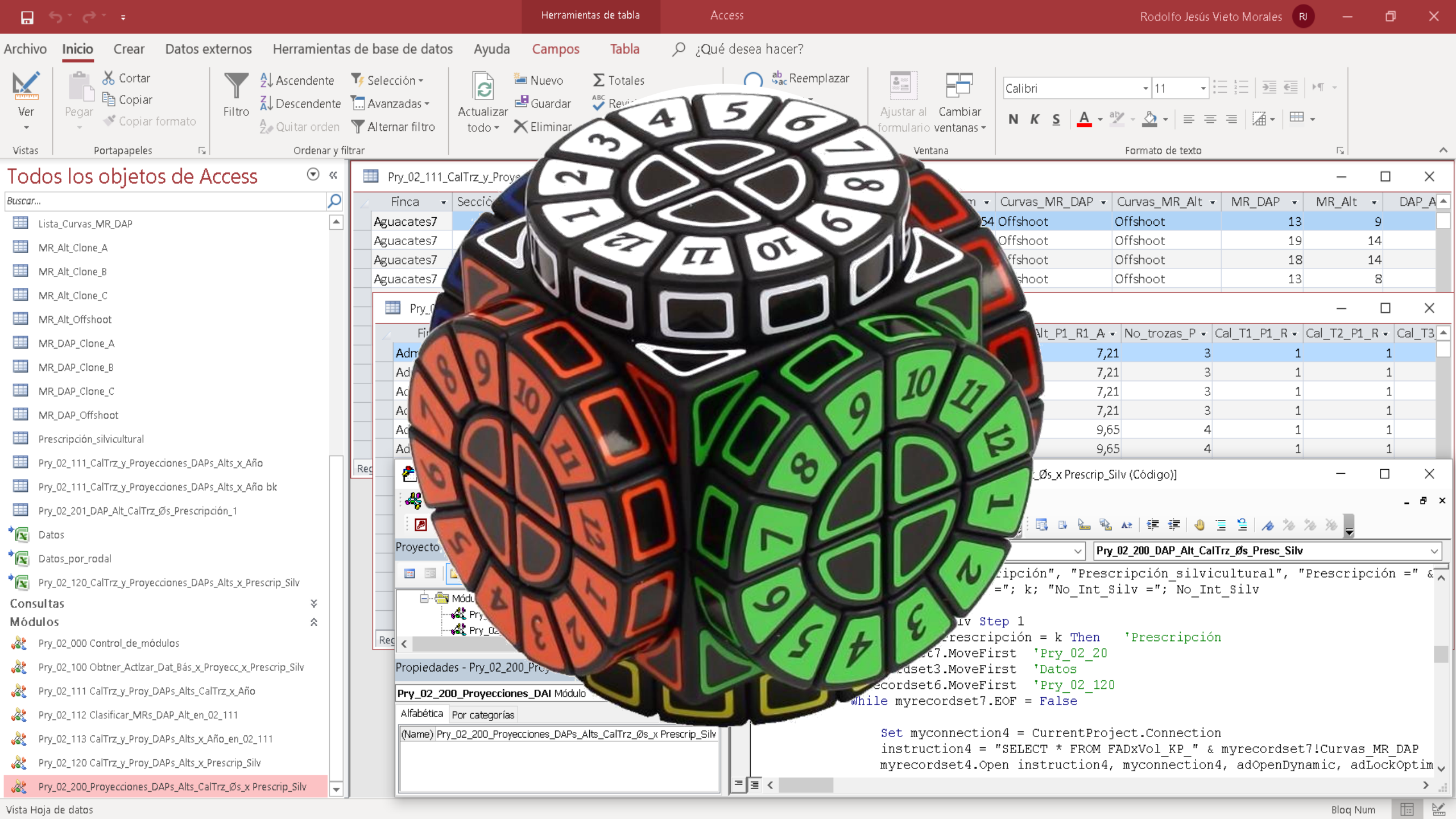


# Forestry plantation investments

- **Growth:**
  - Diameter
  - Height
- **Yield: (Expected products)**
  - Diameter
  - Length
  - Quality (shape, knots)
  - Sap/Heartwood ratio
  - Market requirements




Herramientas de tabla
Access
Rodolfo Jesús Vieto Morales
Archivo Inicio Crear Datos externos Herramientas de base de datos Ayuda Campos Tabla ¿Qué desea hacer?
Ver Pegar Cortar Copiar Copiar formato Filtro Ascendente Descendente Quitar orden Selección Avanzadas Alternar filtro Actualizar todo Nuevo Guardar Eliminar Totales Revisión ortográfica Más Buscar Reemplazar Ir a Seleccionar Ajustar al formulario Cambiar ventanas Calibri 11
Vistas Portapapeles Ordenar y filtrar Registros Buscar Ventana Formato de texto
Todos los objetos de Access
Buscar...
Lista_Curvas_MR_DAP
MR_Alt_Clone_A
MR_Alt_Clone_B
MR_Alt_Clone_C
MR_Alt_Offshoot
MR_DAP_Clone_A
MR_DAP_Clone_B
MR_DAP_Clone_C
MR_DAP_Offshoot
Prescripción_silvicultural
Pry_02_111_CalTrz_y_Proyecciones_DAPs_Alts_x_Año
Pry_02_111_CalTrz_y_Proyecciones_DAPs_Alts_x_Año bk
Pry_02_201_DAP_Alt_CalTrz_Øs_Prescripción_1
Datos
Datos_por_rodal
Pry_02_120_CalTrz_y_Proyecciones_DAPs_Alts_x_Prescrip_Silv
Consultas
Módulos
Pry_02_000 Control_de_módulos
Pry_02_100 Obtner_Actlzar_Dat_Bás_x_Proyecc_x_Prescrip_Silv
Pry_02_111 CalTrz_y_Proy_DAPs_Alts_CalTrz_x_Año
Pry_02_112 Clasificar_MRs_DAP_Alt_en_02_111
Pry_02_113 CalTrz_y_Proy_DAPs_Alts_x_Año_en_02_111
Pry_02_120 CalTrz_y_Proy_DAPs_Alts_x_Prescrip_Silv
Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs_x Prescrip_Silv
Pry_02_111_CalTrz_y_Proyecciones_DAPs_Alts_x_Año bk
Finca Sección No_Parcela Area_Parcela No_Arbol Edad_años DAP_cm Alt_m Curvas_MR_DAP Curvas_MR_Alt MR_DAP MR_Alt DAP_A
Aguacates7 1002 100201 501 10020101 10 15,11972 12,54 Offshoot Offshoot 13 9
Aguacates7 1002 100201 501 10020103 10 9,1354937 9,21 Offshoot Offshoot 19 14
Aguacates7 1002 100201 501 10020104 10 9,3583107 9,37 Offshoot Offshoot 18 14
Aguacates7 1002 100201 501 10020105 10 16,074649 12,94 Offshoot Offshoot 13 8
Pry_02_201_DAP_Alt_CalTrz_Øs_Prescripción_1
Finca Sección Edad_años No_Arbol Curvas_MR_I Curvas_MR_ DAP_P1_R1_ Alt_P1_R1_A No_trozas_P Cal_T1_P1_R Cal_T2_P1_R Cal_T3
Admirador58 1001 8 100101001 Clone_B Clone_B 9,32 7,21 3 1 1
Admirador58 1001 8 100101002 Clone_B Clone_B 9,32 7,21 3 1 1
Admirador58 1001 8 100101003 Clone_B Clone_B 9,32 7,21 3 1 1
Admirador58 1001 8 100101004 Clone_B Clone_B 9,32 7,21 3 1 1
Admirador58 1001 8 100101005 Clone_B Clone_B 11,82 9,65 4 1 1
Admirador58 1001 8 100101006 Clone_B Clone_B 11,82 9,65 4 1 1
Microsoft Visual Basic para Aplicaciones - OptiForestVal_1.3-02_Proyecciones - [Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs_x Prescrip_Silv (Código)]
Archivo Edición Ver Insertar Depuración Ejecutar Herramientas Complementos Ventana Ayuda
Lín 129, Col 5
Proyecto - Database1
Módulos
Pry_02_000 Control_de_módulos
Pry_02_100 Obtner_Actlzar_Dat_Bás_x_Proyecc_x_Pre
Propiedades - Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs
Pry_02_200_Proyecciones_DAI Módulo
Alfabética Por categorías
(Name) Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs_x Prescrip_Silv
(General)
Pry_02_200_DAP_Alt_CalTrz_Øs_Presc_Silv
No_Int_Silv = DCount("Prescripción", "Prescripción_silvicultural", "Prescripción =" &
Debug.Print "No_Presc_Silv ="; k; "No_Int_Silv ="; No_Int_Silv
For l = 1 To No_Int_Silv Step 1
If myrecordset2!Prescripción = k Then 'Prescripción
myrecordset7.MoveFirst 'Pry_02_20
myrecordset3.MoveFirst 'Datos
myrecordset6.MoveFirst 'Pry_02_120
While myrecordset7.EOF = False
Set myconnection4 = CurrentProject.Connection
instruction4 = "SELECT * FROM FADxVol_KP_" & myrecordset7!Curvas_MR_DAP
myrecordset4.Open instruction4, myconnection4, adOpenDynamic, adLockOptim
Vista Hoja de datos
Bloq Num


Herramientas de tabla
Access
Rodolfo Jesús Vieto Morales
Archivo Inicio Crear Datos externos Herramientas de base de datos Ayuda Campos Tabla ¿Qué desea hacer?
Ver Pegar Cortar Copiar Copiar formato Filtro Ascendente Descendente Quitar orden Selección Avanzadas Alternar filtro Actualizar todo Nuevo Guardar Eliminar Totales Reemplazar Ajustar al formulario Cambiar ventanas Calibri 11
Vistas Portapapeles Ordenar y filtrar Ventana Formato de texto
Todos los objetos de Access
Buscar...
Lista_Curvas_MR_DAP
MR_Alt_Clone_A
MR_Alt_Clone_B
MR_Alt_Clone_C
MR_Alt_Offshoot
MR_DAP_Clone_A
MR_DAP_Clone_B
MR_DAP_Clone_C
MR_DAP_Offshoot
Prescripción_silvicultural
Pry_02_111_CalTrz_y_Proyecciones_DAPs_Alts_x_Año
Pry_02_111_CalTrz_y_Proyecciones_DAPs_Alts_x_Año bk
Pry_02_201_DAP_Alt_CalTrz_Øs_Prescripción_1
Datos
Datos_por_rodal
Pry_02_120_CalTrz_y_Proyecciones_DAPs_Alts_x_Prescrip_Silv
Consultas
Módulos
Pry_02_000 Control_de_módulos
Pry_02_100 Obtner_Actlzar_Dat_Bás_x_Proyecc_x_Prescrip_Silv
Pry_02_111 CalTrz_y_Proy_DAPs_Alts_CalTrz_x_Año
Pry_02_112 Clasificar_MRs_DAP_Alt_en_02_111
Pry_02_113 CalTrz_y_Proy_DAPs_Alts_x_Año_en_02_111
Pry_02_120 CalTrz_y_Proy_DAPs_Alts_x_Prescrip_Silv
Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs_x Prescrip_Silv
Pry_02_111_CalTrz_y_Proys
Finca
Curvas_MR_DAP
Curvas_MR_Alt
MR_DAP
MR_Alt
Aguacates7
Offshoot
No_trozas_P
Cal_T1_P1_R
Cal_T2_P1_R
Cal_T3
Proyecto
Propiedades - Pry_02_200_Proy
Pry_02_200_Proyecciones_DAI Módulo
Alfabética
Por categorías
(Name) Pry_02_200_Proyecciones_DAPs_Alts_CalTrz_Øs_x Prescrip_Silv
Pry_02_200_DAP_Alt_CalTrz_Øs_Presc_Silv
Vista Hoja de datos
Bloq Num

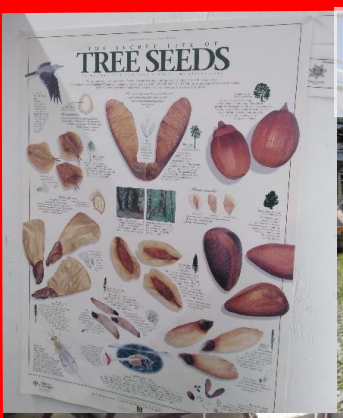
# My work at the WFC

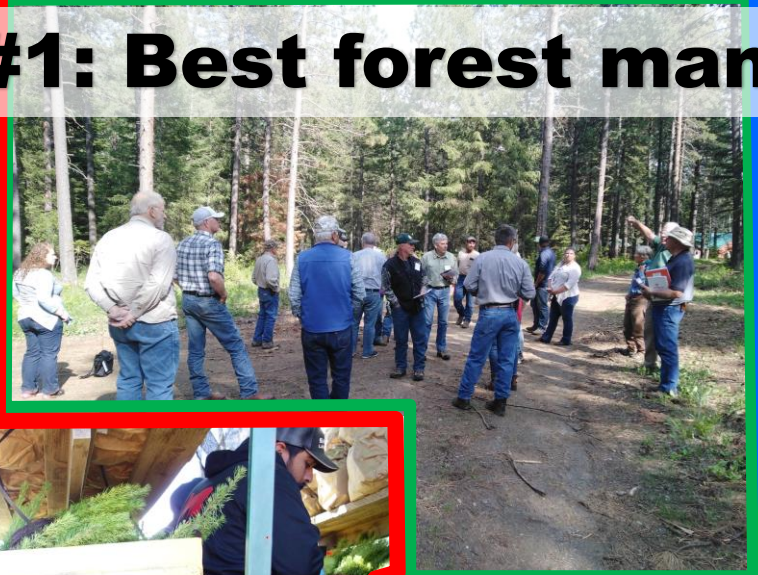
## Objectives

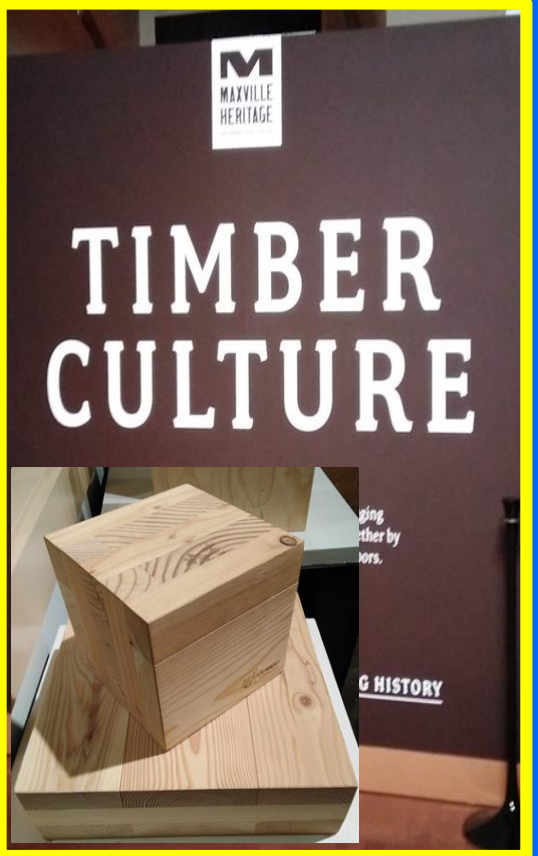
1. Learning about best forest management practices and technological trends in the forest products supply chain in the PNW

2. Evaluating my growth and yield projection tool and setting improvement goals for it where needed

# Objective #1: Best forest management practices





# Objective #2: Evaluation of my G&Y projection tool

Internship with Greenwood Resources Inc.

- Validating my growth and yield projection tool

# Findings

My G&Y projection tool:

- Produces:
  - **Highly detailed product merchandizing projections** on a log by log basis
  - **More realistic products valuation**
- Needs some tweaks:
  - **Time-efficient in processing**, in some of its modules
  - **Add new output formats to it**

# What am I taking back home?

- A list of improvements to work on my G&Y tool
- A close understanding of the kind of work GWR does and may need help with in the future
- A strong professional network to
  - Connect with Central American reforestation actors
  - Develop faculty lead study trips to Central America
- A very enriching experience of living within a society with a better-balanced eco-culture between forestry and conservation

**Thank you all**
**for your support!**