

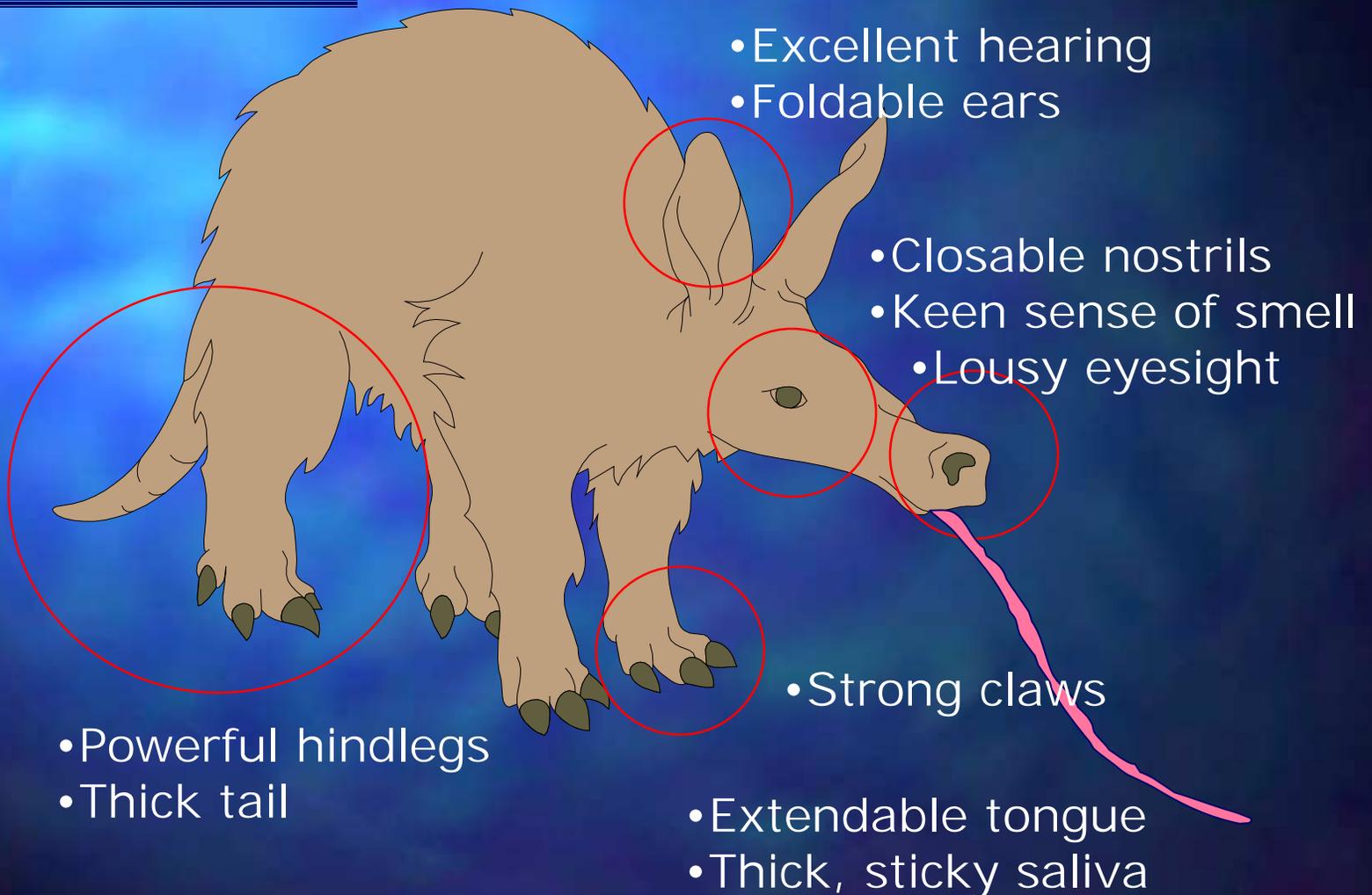
The Origins of Forest Operations

The role of prescription and
practice

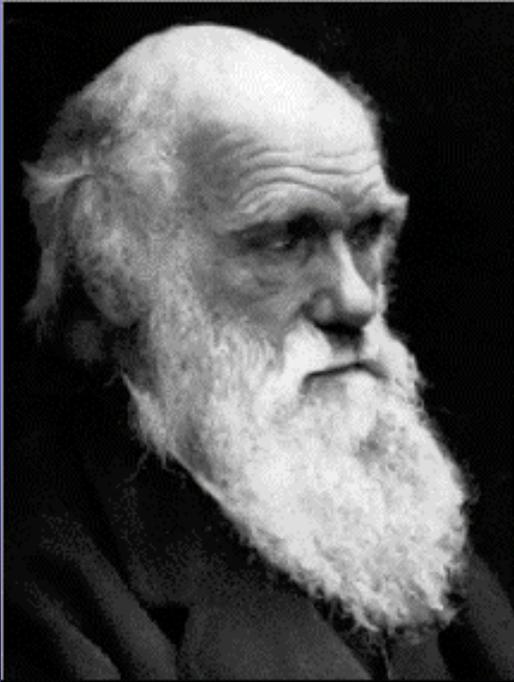


Bob Rummer, Southern Research Station
Auburn, Alabama

Why an Aardvark?

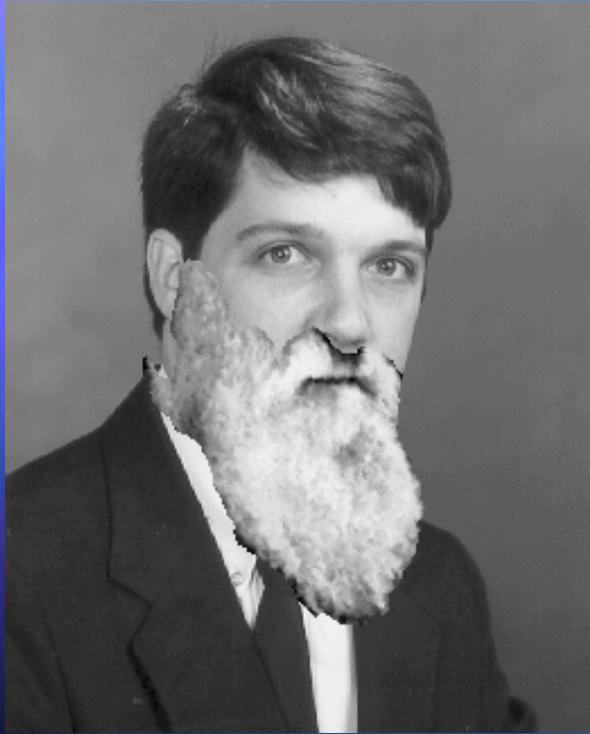


On the Origin of Species



- Mutation/Adaptation
- Selection
- Evolution of population
- Context of the environment

Why a Logger?



A critical question ...

- Forest operations are how we DO forestry
- The demands are changing
- Forest operations are changing

Are we going to have the forest operations available to us to do forestry in the future?

Outline

- Illustrate parallels between evolutionary biology and change in forest operations
- Current forces shaping the development of forest operations
- Convergence of silviculture and forest operations?

Evolution ...

- A population of individuals
- A range of genetic types
- A change in the relative abundance of different genetic types

A diverse population



On the Origins of Loggers

- Change occurs



L. modernus



70,000 tons/yr
5.8 employees



Enhancing the gene pool ...

- Mutation
- Recombination
- Gene flow



Kisatchie NF, Louisiana

Gene flow from land clearing

SHINN CUTTER SYSTEMS

SC-III



"EQUIPMENT WITH AN ATTITUDE"

www.shinncutter.com

Gene flow from Scandinavia



The gene pool for the future



Photo: Timberjack

- Walking
- Talking
- Thinking



Reducing the gene pool ...

- Natural selection
- "Survival of the fittest"



IRON MARE INC.

MARKED DOWN

98 hrs.	\$82,500
89 hrs.	\$85,000
	\$84,900
tires	\$65,000
	\$64,000
res:	\$57,900 ea.
	\$64,900
	\$39,800
	\$55,000
	\$76,500
2BL	\$44,500
	\$71-77,000
	\$41-44,900
	\$27,900
	\$39,500
	\$38,500
5's	\$32-38,500
	\$37,500 ea.
	\$32,500
	\$23,800
	\$22,500
	\$15,000
	\$38,500
	\$48,000
	\$31,500

98 Hydro-Ax 321 with 16" shear, 4BTA, A/C, foot steer - \$89,500

CUT-TO-LENGTH EQUIPMENT

96 Franklin 670	Bogie PAB - 6WD, 4600 ldr., A/C, JS, 6BT	\$85,000
96 Linkbelt 2700	Quartrm 18" 4-roller Fabtec, 5800 hrs.	\$119,000
(2) 96 TJ 1210B	8WD Forwarder, 4000-6400 hrs.	\$139.5-169,500
92 TJ 1270	762B, 700 mm tires, 10,049 hrs.	\$87,500

FELER EQUIPMENT

Selection pressures

- Loss of markets
- Tight rates
- Labor availability
- Increasing constraints on operations
- Social license
- New products
- New prescriptions

Getting bigger ...



More extreme sites ...



Reducing impacts



- BMP's
- Restricted season
- Special machines

Visual considerations



Convergence or Divergence?

Prescription to Practice



Functional Requirements



Who will survive?

- Best meets requirements of the niche
- Range of expected variation
- Heterogeneity
- Maximizes return

Non-commodity Silviculture



- No-value
- No extraction
- No footprint

Barriers to adaptation

- Extirpation
- Wide variation
- No transitional forms
- Incompatible requirements

Example: Fuel Reductions

Option A: handpile with prison labor

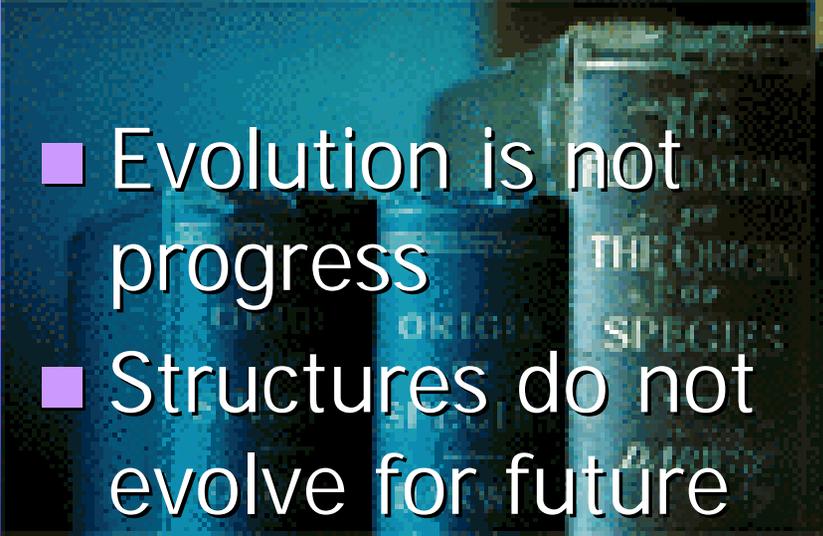
Option B: what can you do for \$2600/ac?



Summary

- Evolution concepts apply to forest operations
- There is a diverse gene pool
- Change is inevitable

Caveats from Darwin

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- Evolution is not progress
 - Structures do not evolve for future utility
 - Extinction happens

- 
- Make sure that forestry needs drive selection
 - Anticipate future needs
 - Support survival of diverse tools

Forestry needs operations

