

# Static Models, Dynamic Processes and the Tongass Land Management Plan

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# Overview

- Two Central Arguments
  - Static, deterministic (and complex) models don't work in predicting futures for dynamic, stochastic systems
  - Adaptive management approaches are very difficult to implement in highly contentious planning environments

# Overview

- Strategy

Comparison of ex ante predictions and ex post outcomes associated with the Tongass Land Management Plan in Southeast Alaska

- General planning process
- Economic Impact Analysis
- Predicted harvest levels

Conclude with discussion of new FS planning rule

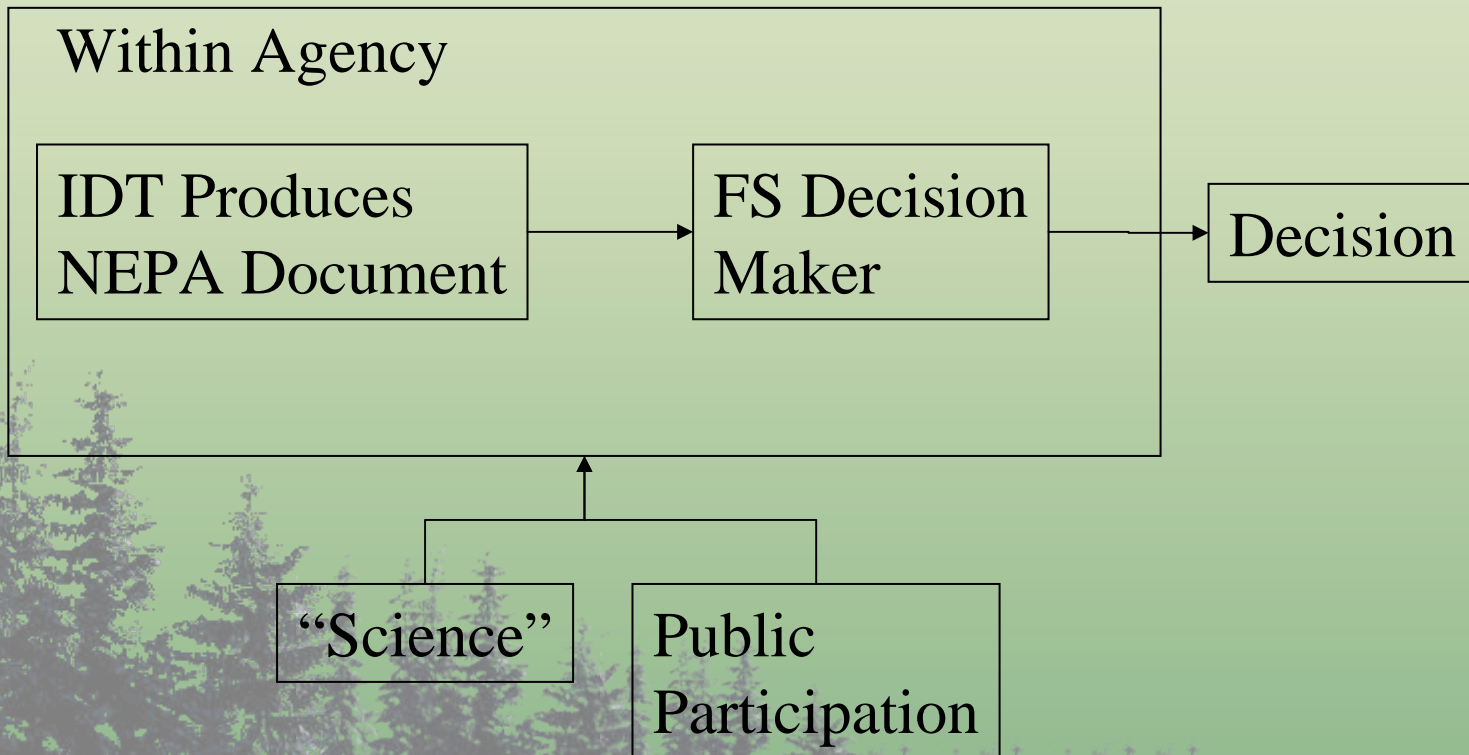
# Tongass Land Management Plan

- Part of a recurrent forest planning process stipulated by the NFMA
- Subject to NEPA requiring an EIS
- Anticipated a reduction of timber harvest
- Highly contentious

Framed as a classic conflict between jobs and the environment

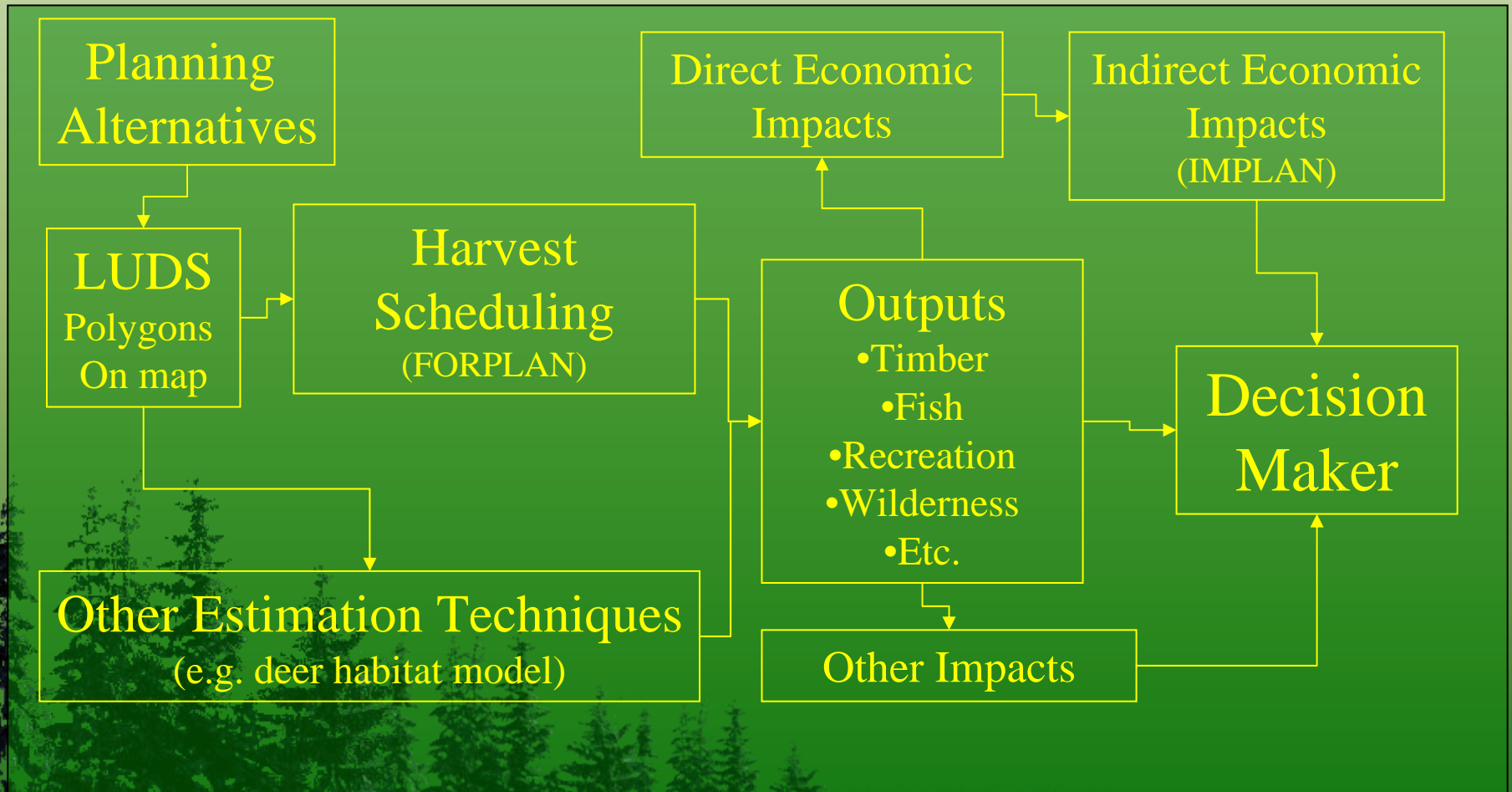
# Technocratic Planning Model

## Formal Process



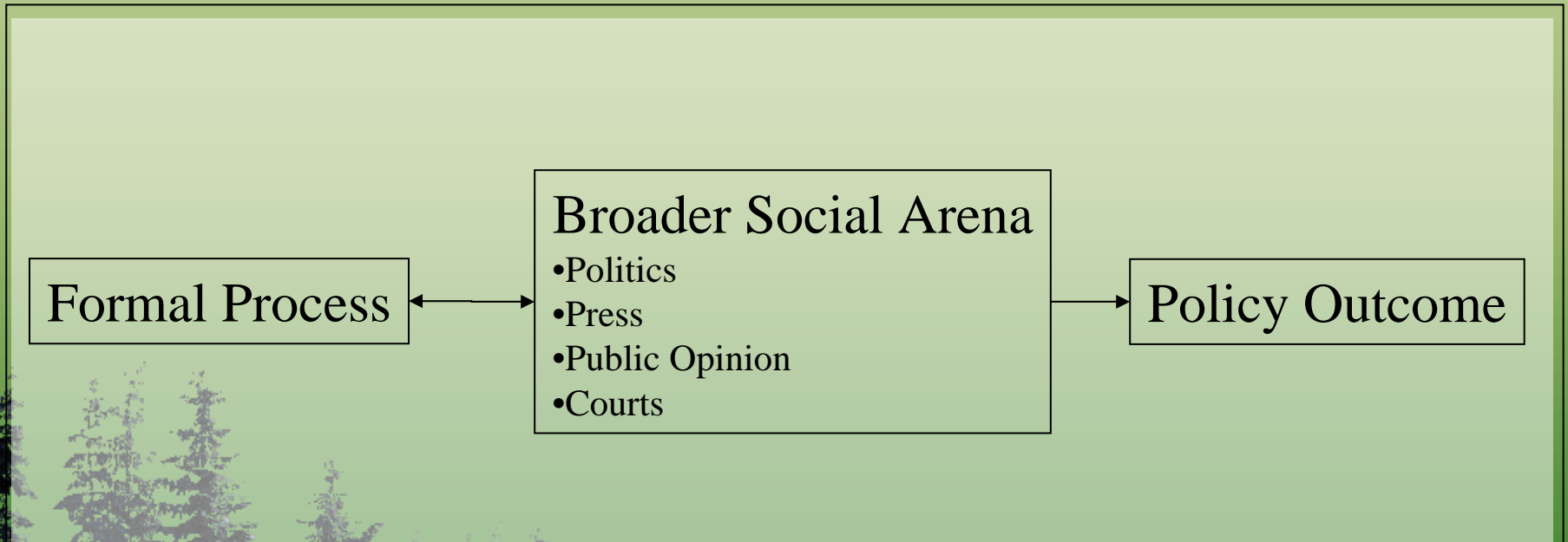
# Deterministic Planning Model

## Nested within technocratic model





# Social Choice Planning Model



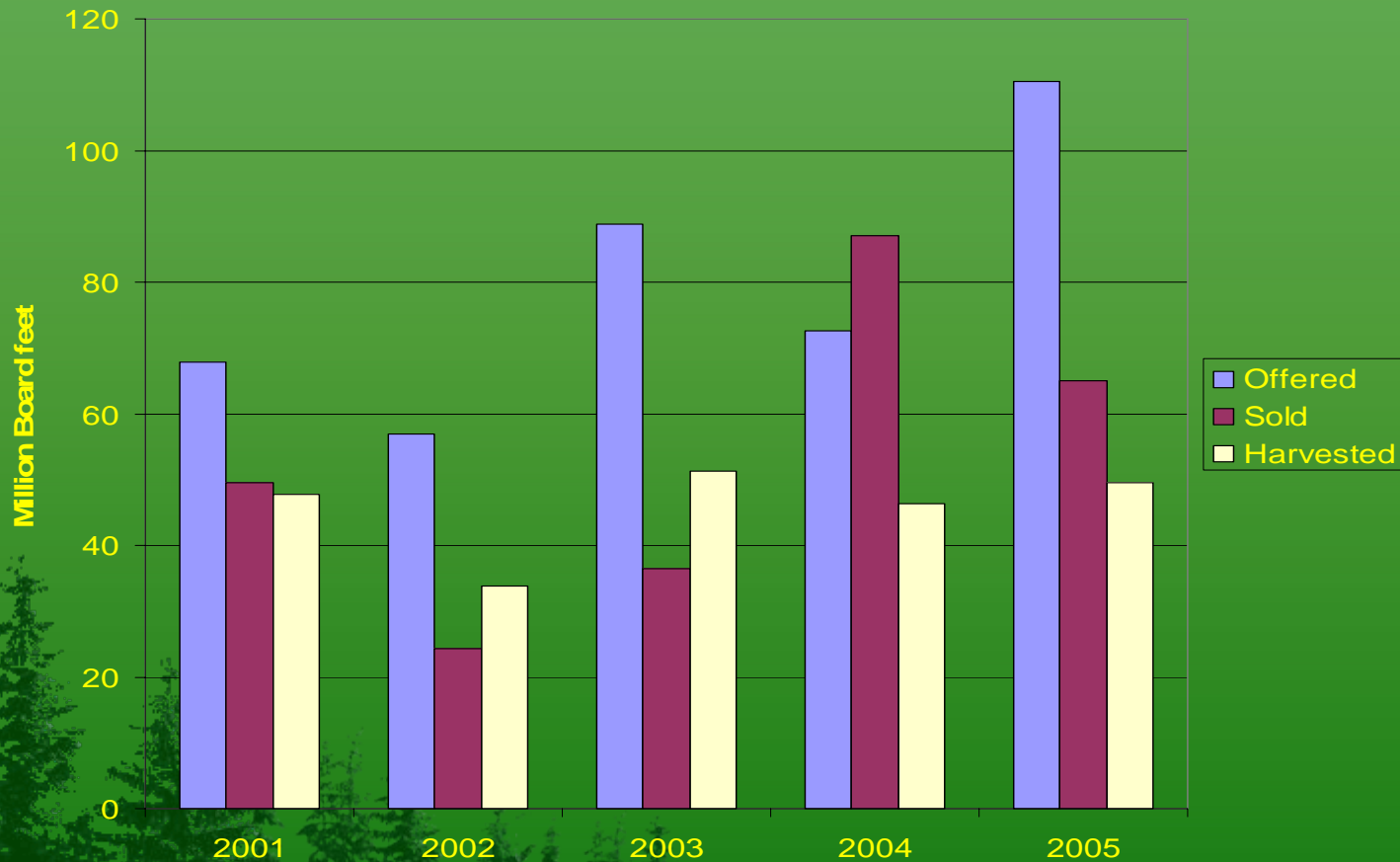
# TLMP Preferred Alternative:

Called for a 200 million board foot (MMbf) reduction in harvest  
(down from previous average of 450 MMbf)

## Projected Employment Impacts:

	per MMbf	@ -200 MMbf
Direct Employment	3.03	-607
Total employment (Multiplier = 2.93)	8.89	-1,778

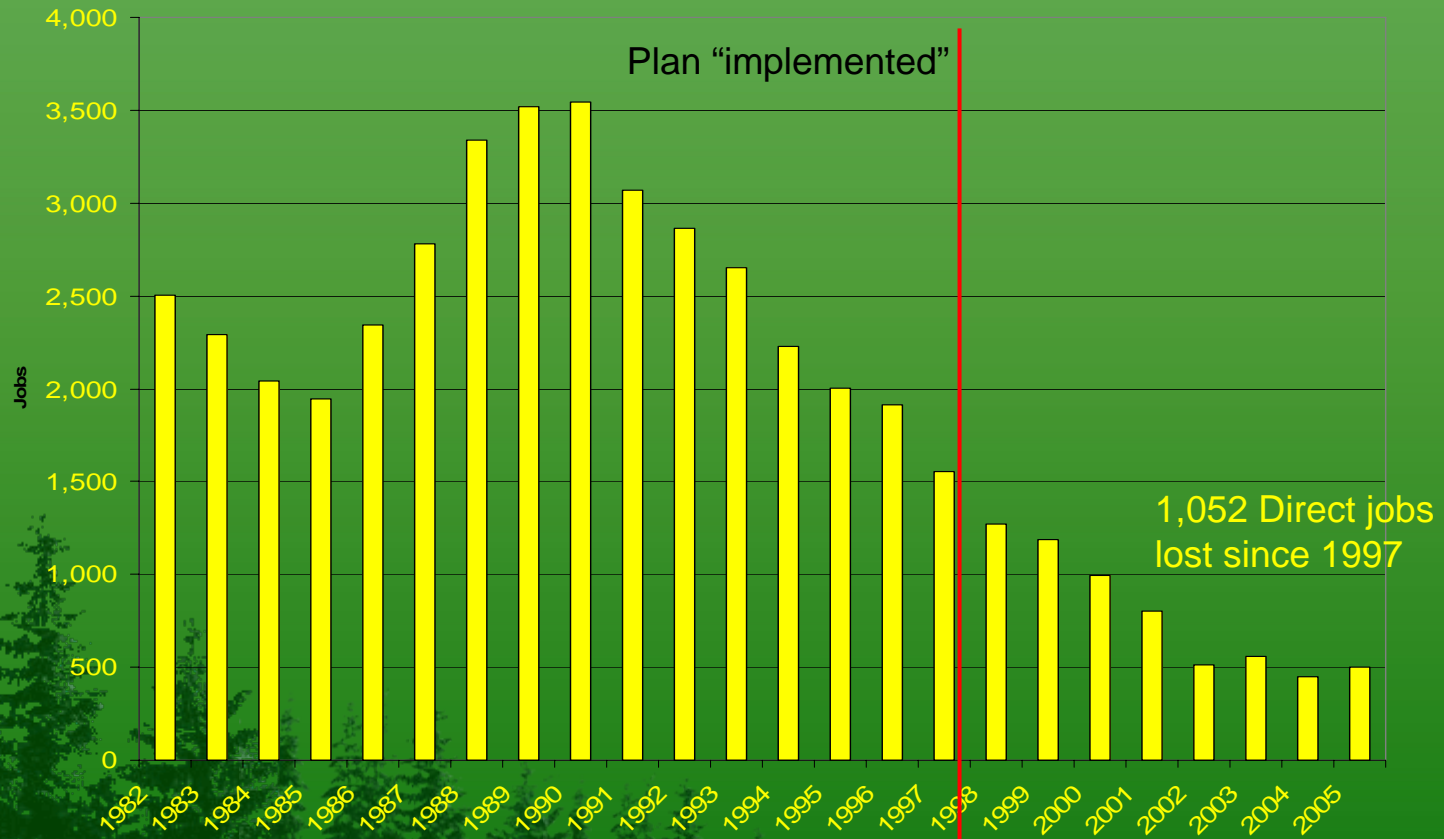
# What Actually Happened: Timber Harvest



Markets didn't cooperate...

# What Actually Happened:

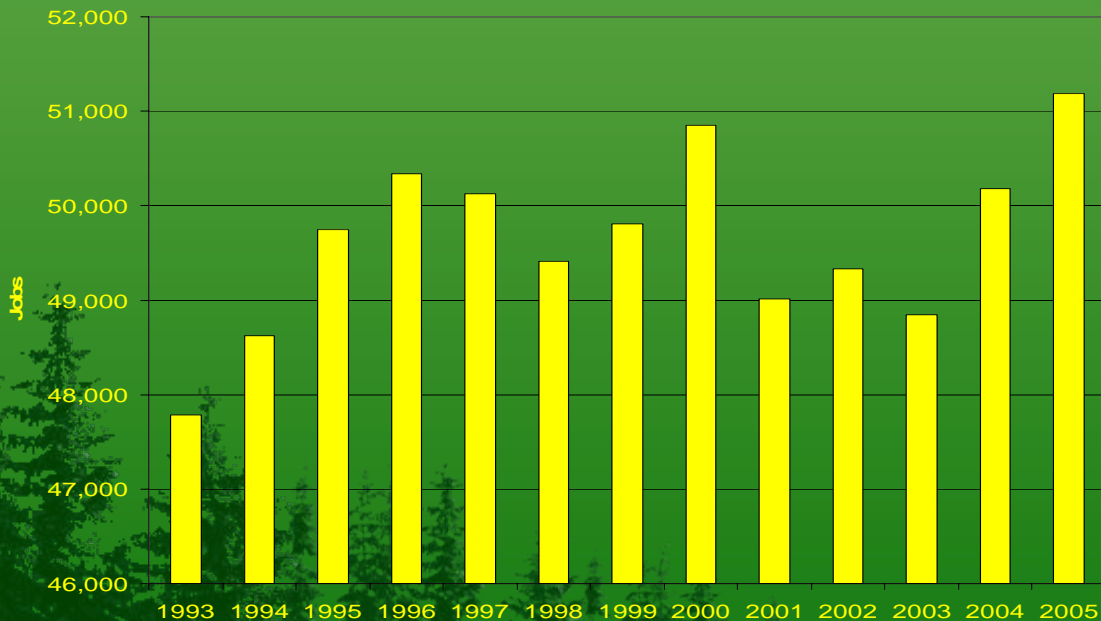
## Direct Employment



# What about the indirect and Induced employment impacts?

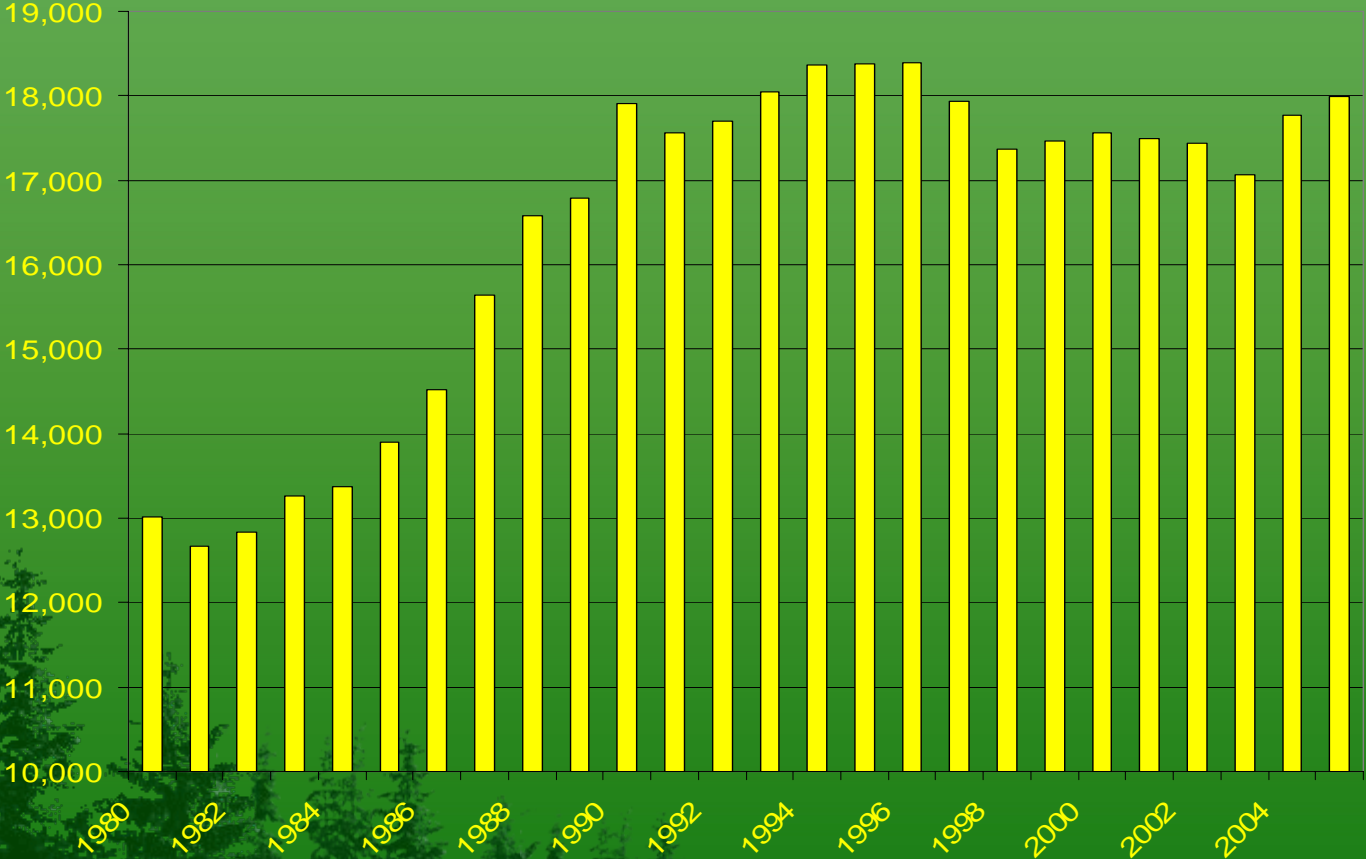
@ 2.93 total jobs per direct job, impacts would be on the order of:

$$1,052 \times 2.93 = 3,082 \text{ jobs}$$



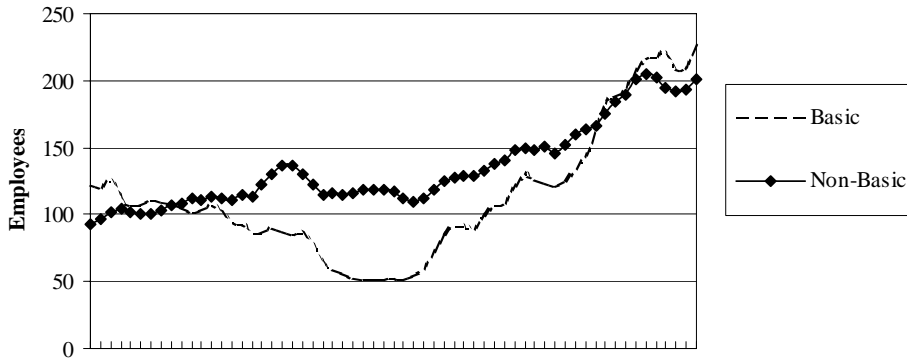
Total Employment in SE Alaska

# In Timber Production Counties?

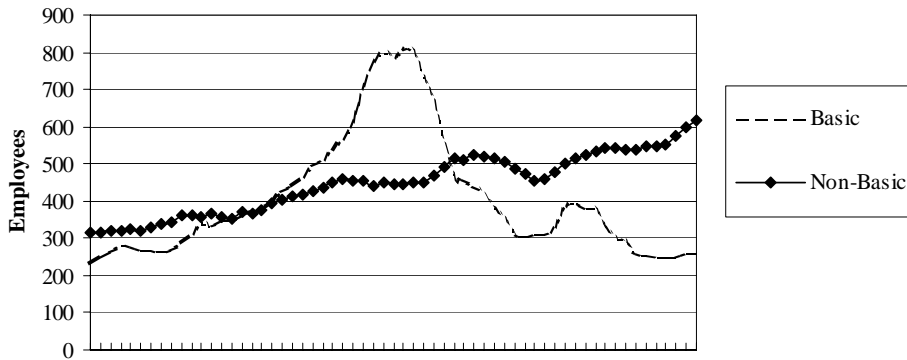


Total Employment in Ketchikan, Prince of Wales, and Wrangel

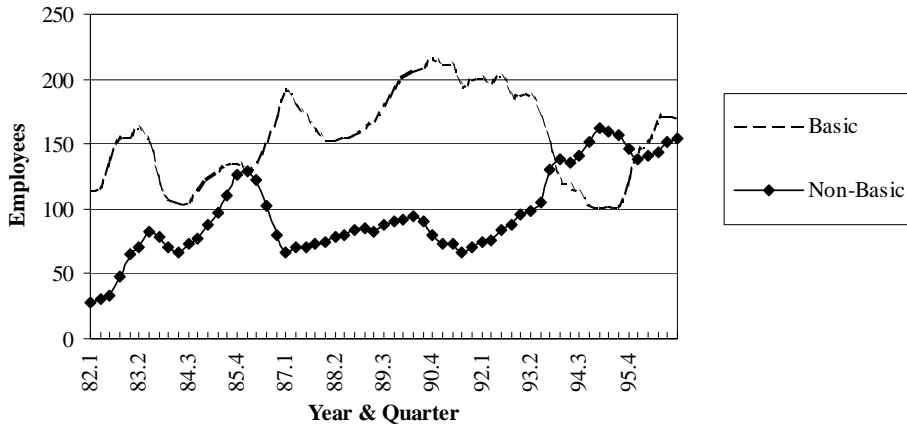
### Yakutat



### Haines

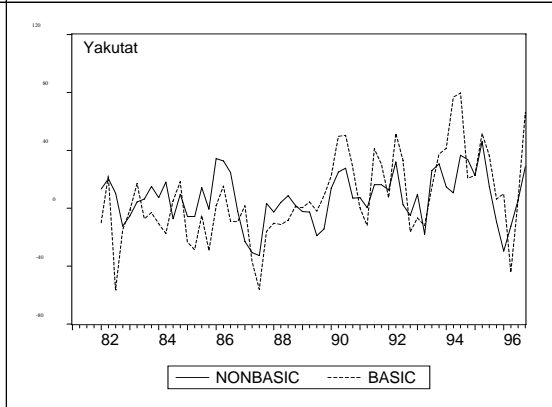
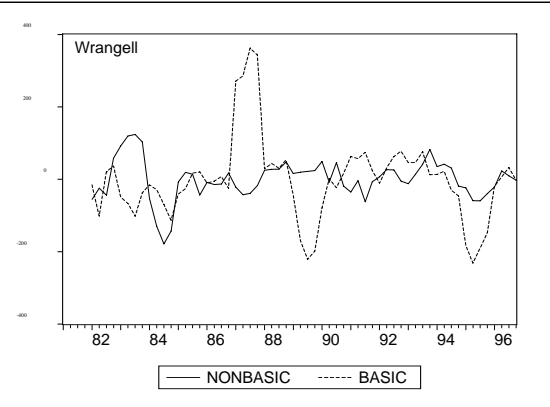
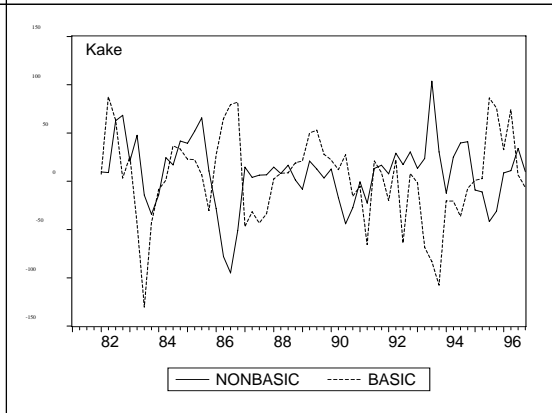
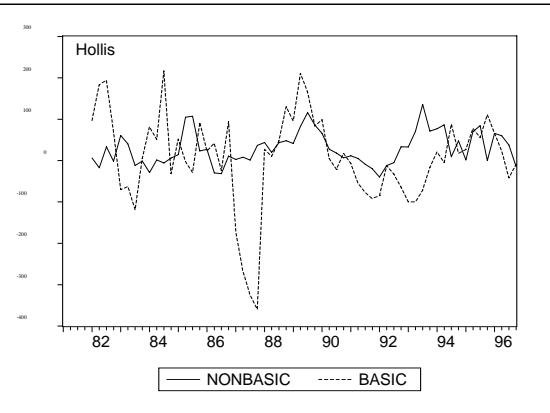
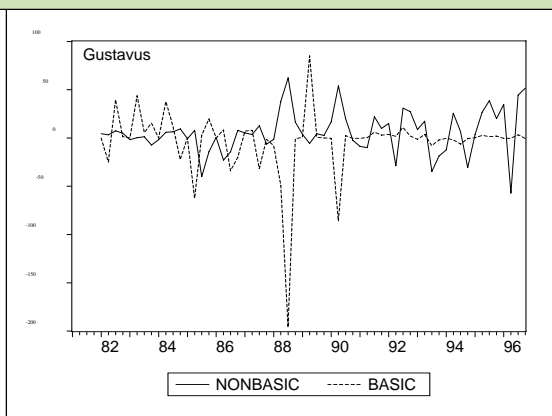
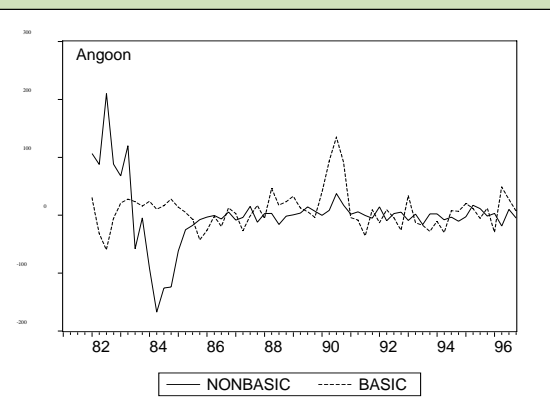


### Kake



# Evidence of Multipliers ... ?

“Basic” and “Non-Basic” employment in selected communities



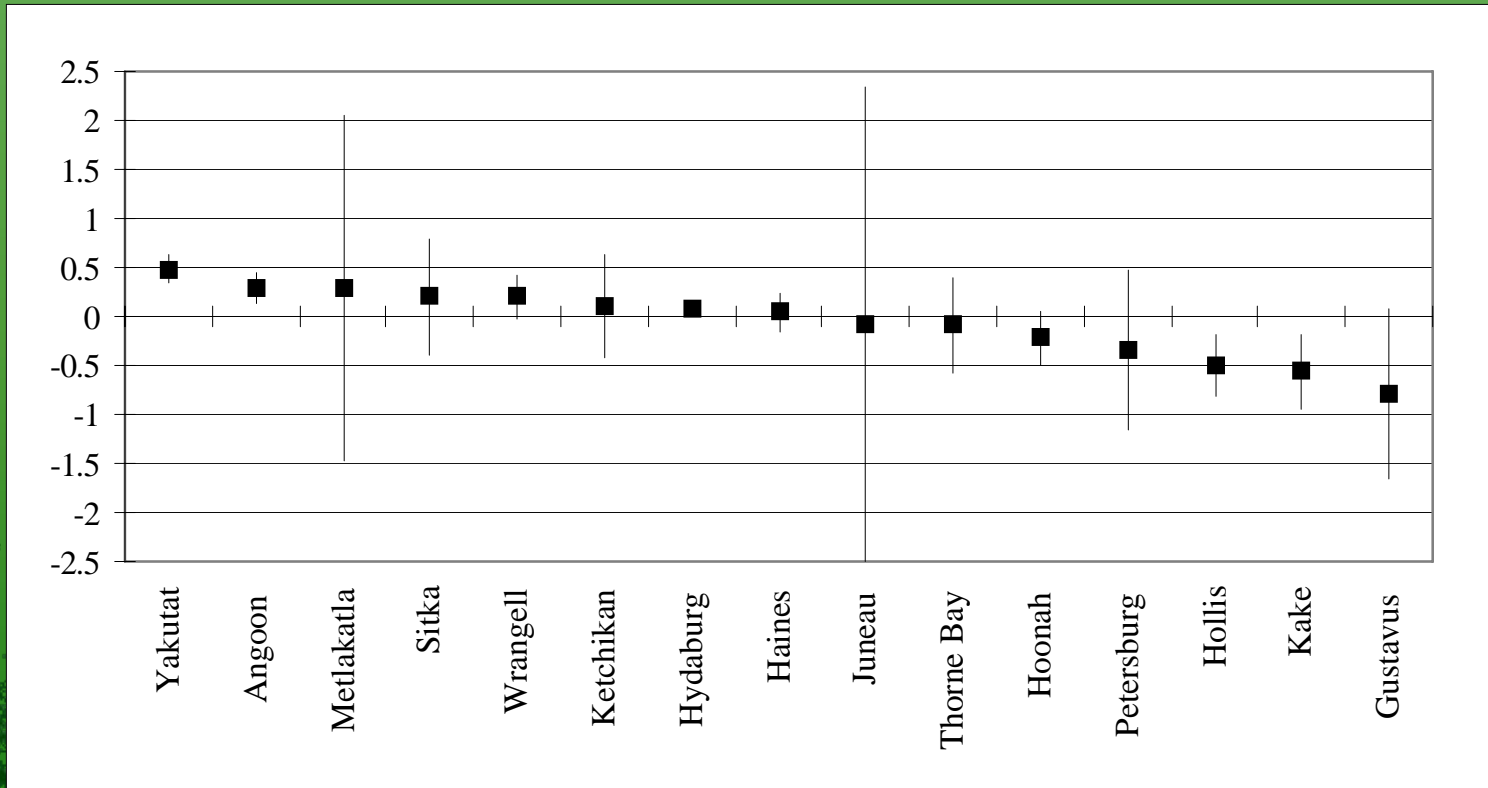
# Evidence of Multipliers ...?

“Basic” and “Non-Basic” employment in selected communities (first differenced)



# Evidence of Multipliers

...?



Regression Estimates of Multipliers with  
+/- 2 standard deviations

# Evidence of Multipliers

...?

No

But why?

- Leakage
- Labor inelasticity
- Static models can't predict dynamic systems...not even as approximations

# So was the TLMP a Failure?

No

- Public information document
- Reference to keep the debaters honest
- Focus for social and legal debate
  - Current conditions
  - Projections

But not a success in the narrow technocratic decision model sense

# So was the TLMP a Failure?

## Also numerous “setbacks”

- 1999 New ROD released to address 33 TLMP Appeals.
- 2001 1999 ROD vacated; 1997 ROD reinstated.
- 2003 February 2003: Supplemental Environmental Impact Statement – Roadless Area Evaluation for Wilderness Recommendations Record of Decision.
- 2005 Ninth Circuit Court claims inadequacies in NEPA procedures requires additional adjustments and updates of the Forest Plan (officially called a Forest Plan Amendment).
- 2007 The Draft Environmental Impact Statement and proposed Forest Plan Amendment became available for public review

Reaffirms broader social arena as locus of decision making

# So what to do?

## Adaptive Management

- FS buzz word for at least ten years
- Monitoring plan required in all planning exercises
- Appx. \$400 million for inventory and monitoring activities

But, in response to potential legal challenges

- “Bullet proof” the plan
- Check off the monitoring report as an afterthought

This is not a very flexible approach

# New FS Planning Rule



Combined with EMS and third party monitoring

Internalizes social choice dynamics through collaboration

# New FS Planning Rule

Aims to provide a flexible planning approach that avoids conflict and legal challenges

FS argues that the “vision stage” is not subject to NEPA (EIS) as it does not involve actions on the ground

Unclear if and how conflict will be arbitrated

However, the Rule itself was successfully challenged in 9<sup>th</sup> circuit owing to lack of EIS

# Conclusion

- Technocratic model is out of touch with reality
  - Failure to adequately predict
  - Decision locus not with the agency
- Communication and information flow more important than technique
  - Fancy models and false precision



# Conclusion

- Adaptive management problematic in conflict environment
  - From an agency perspective at least
  - From broader social perspective system may be adaptive, though cumbersome and expensive
- Anticipating a post-conflict future for public forest management in US