

# Future World Oil Production and the Role of Russia and the Caspian

Ray Leonard

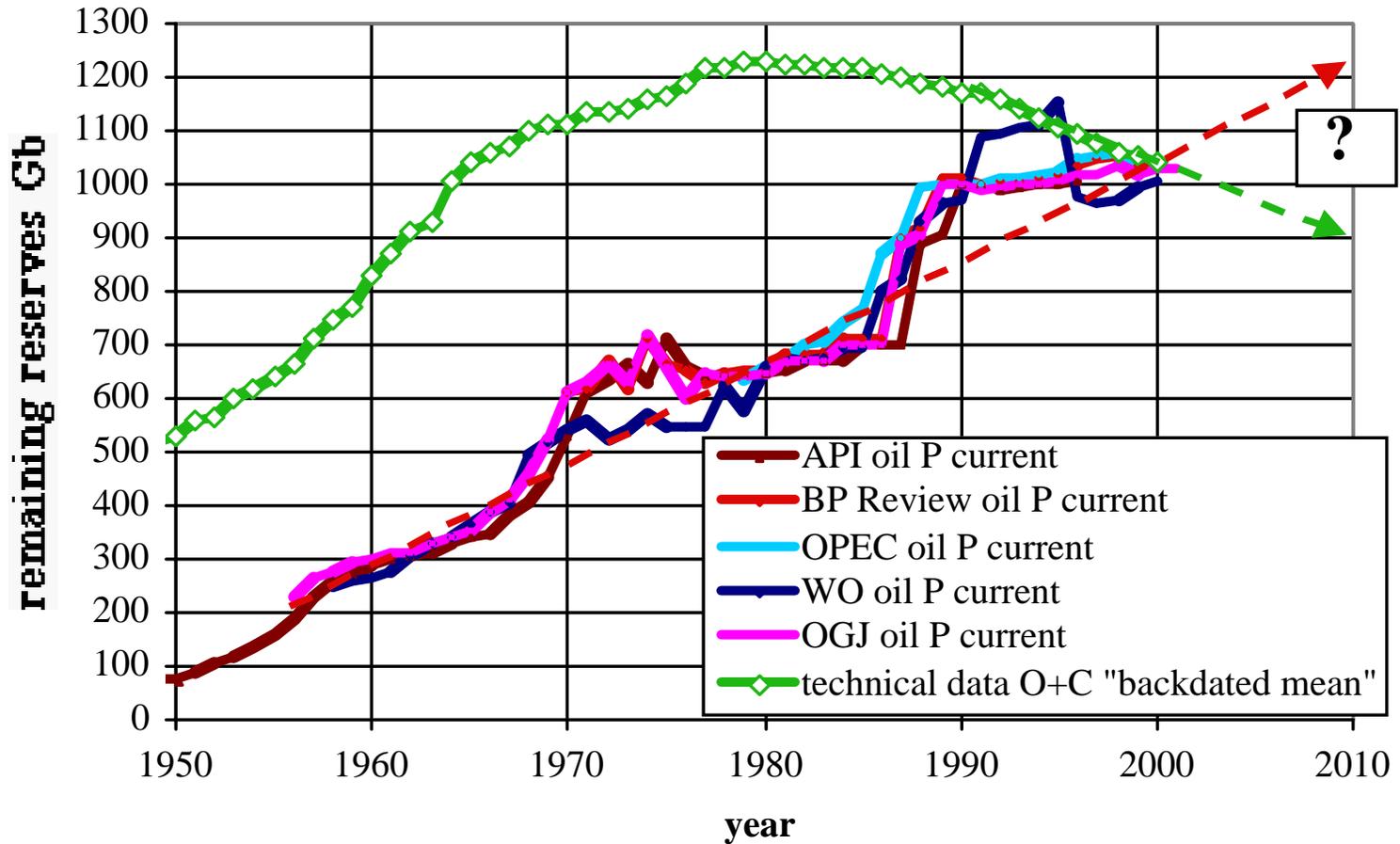
YUKOS

June 2002

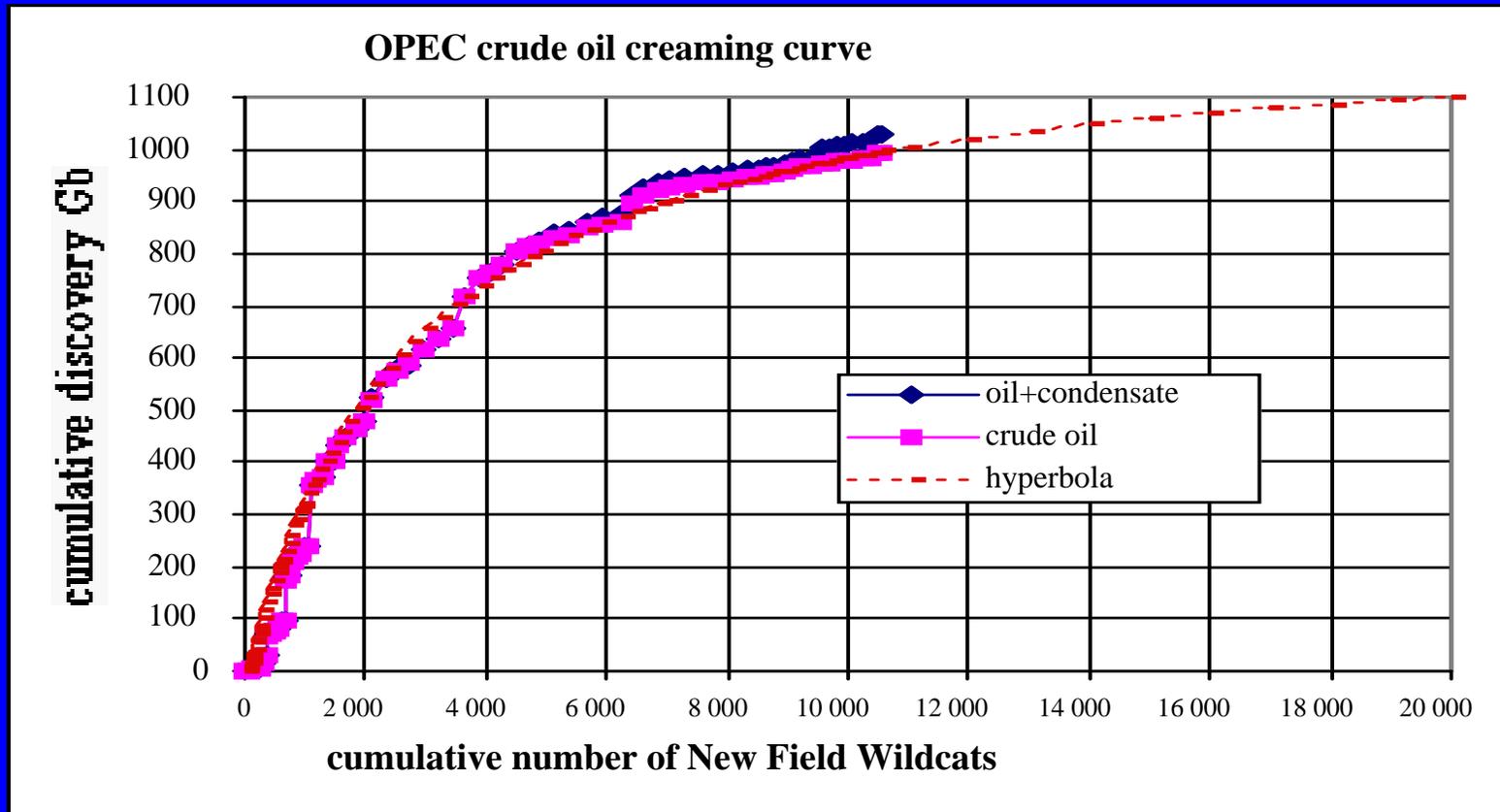
# Oil Depletion

- Modeling based on Hubbard Curve defines likely peak in world production as presented in Uppsala conference on oil depletion
- Working with Jean Lahererre, I have adapted the curves to reflect YUKOS model of Russia and Caspian reserves (all curves in this report have been produced by Lahererre)
- Assumption is 105 BBL Russia and 55 BBL Caspian crude reserves (rather than 55 BBL Russia and 25 BBL Caspian from other sources)
- Crucial point is to backdate reserve additions to time of initial discovery of field

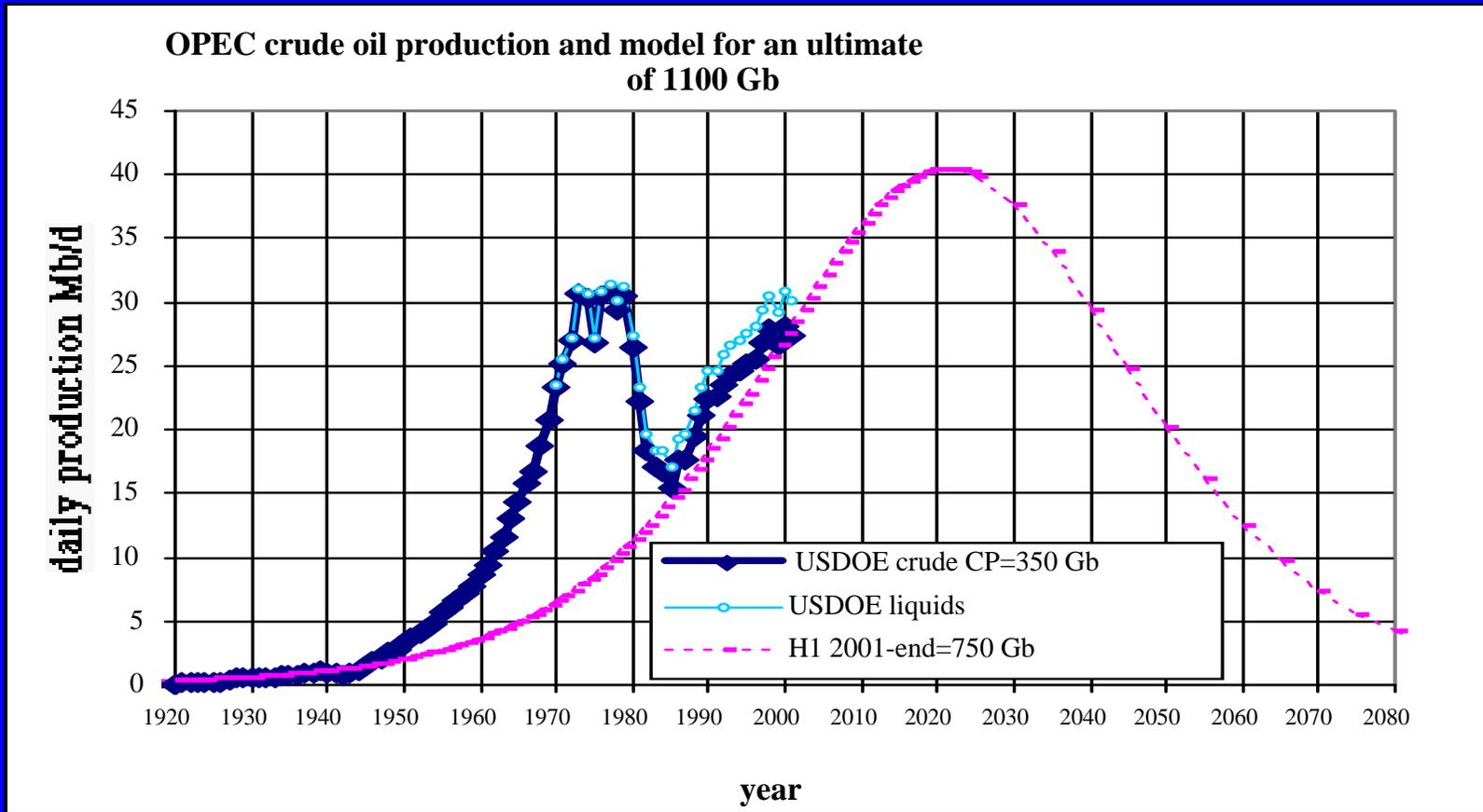
## World's oil remaining reserves from "political" (API, BP, OPEC, World Oil, Oil & Gas Journal) & technical sources



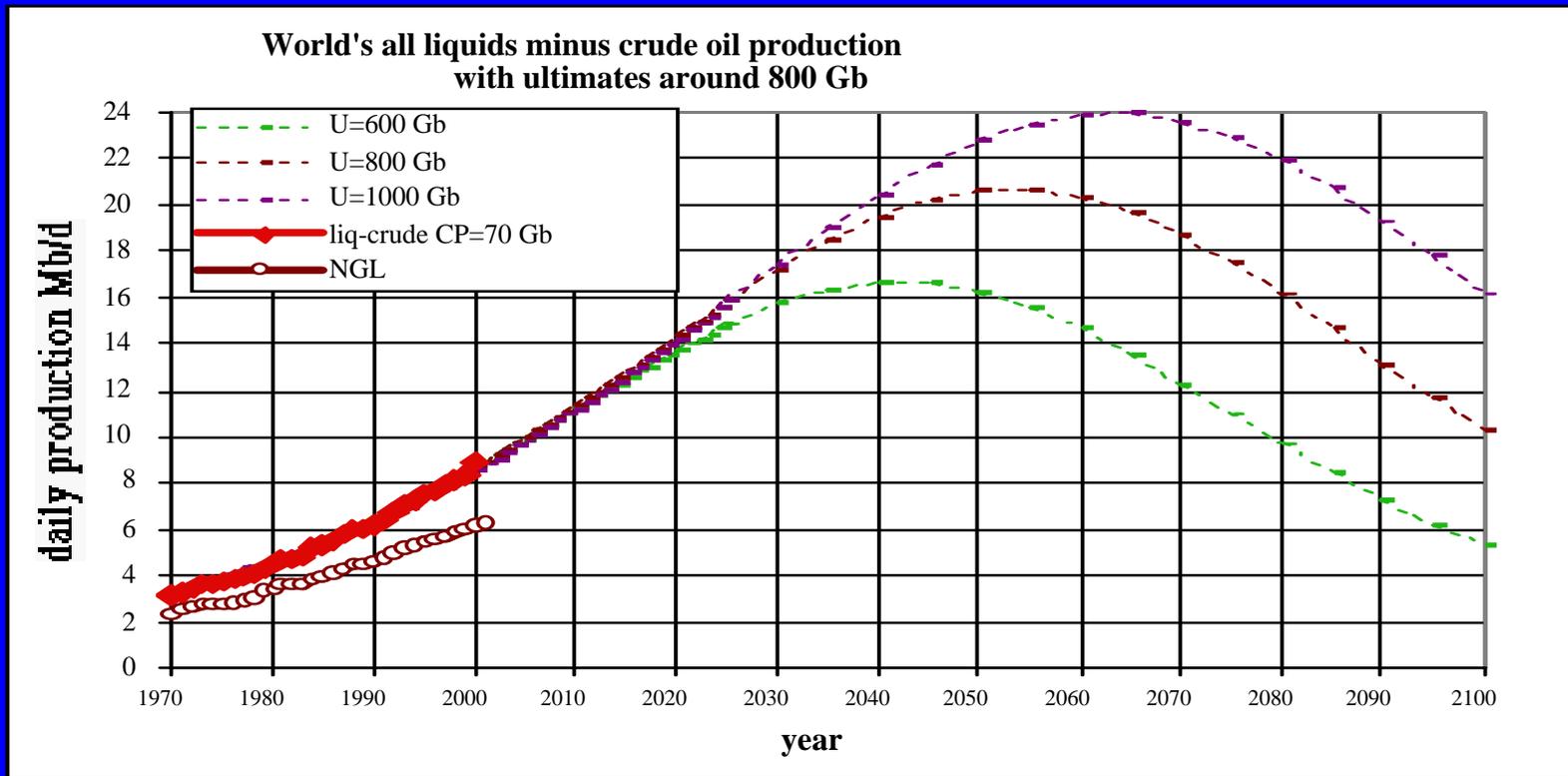
# OPEC decreasing new discoveries (Laherrere, 2002)



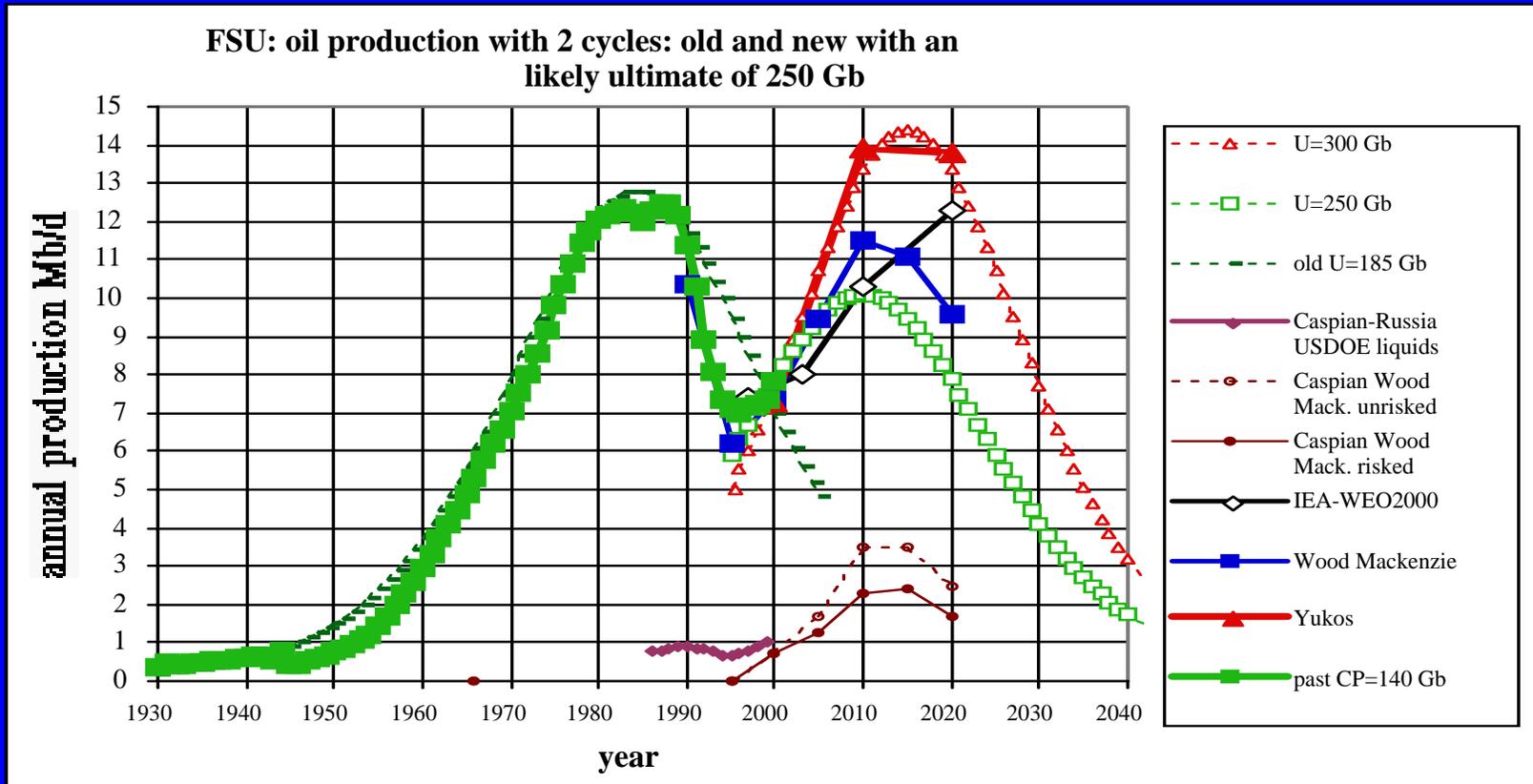
# OPEC Future Production (Laherrere, 2002)



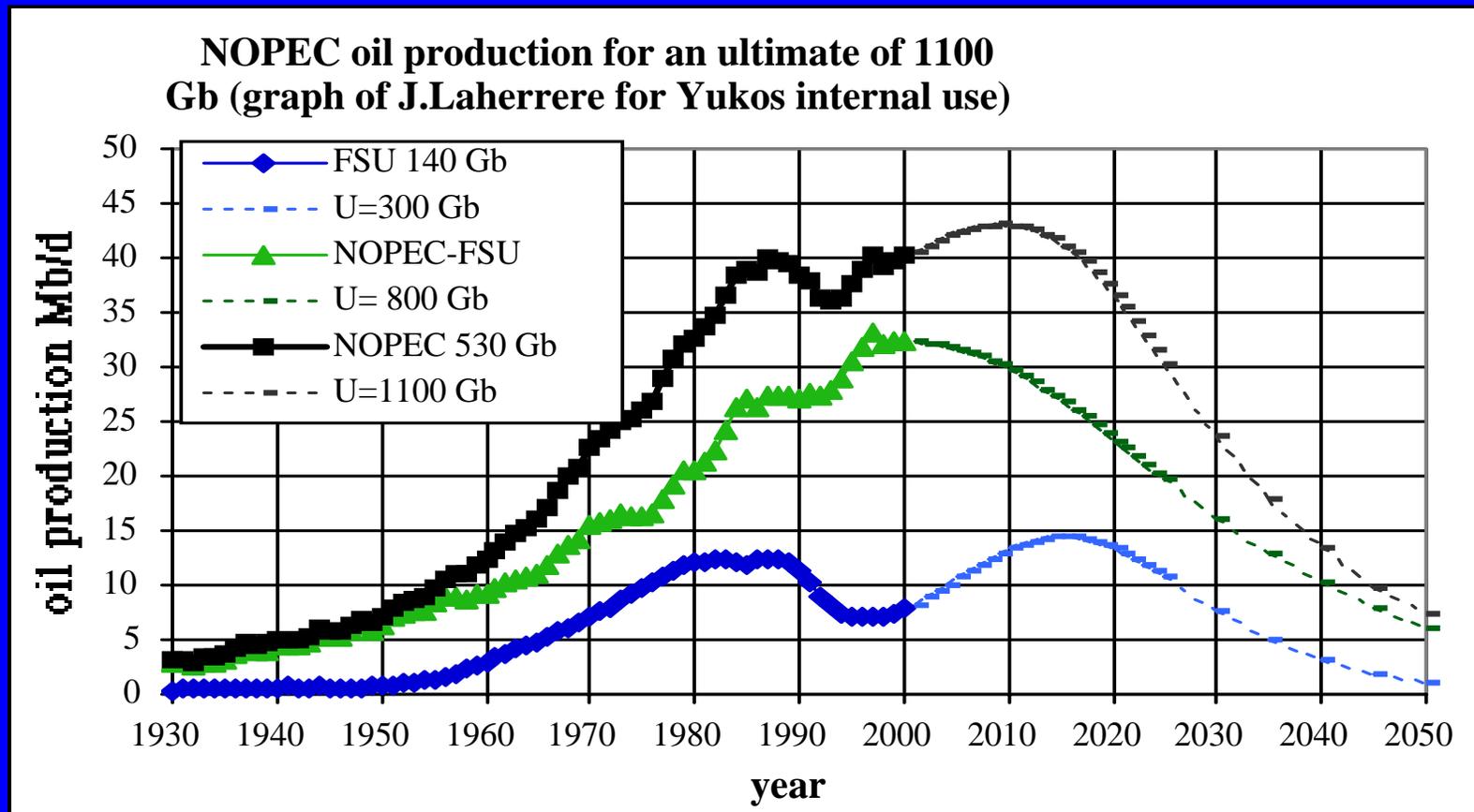
# Projected World Condensate and NGL Production based on Gas Peak at 2050-2060 (Laherrere, 2002)



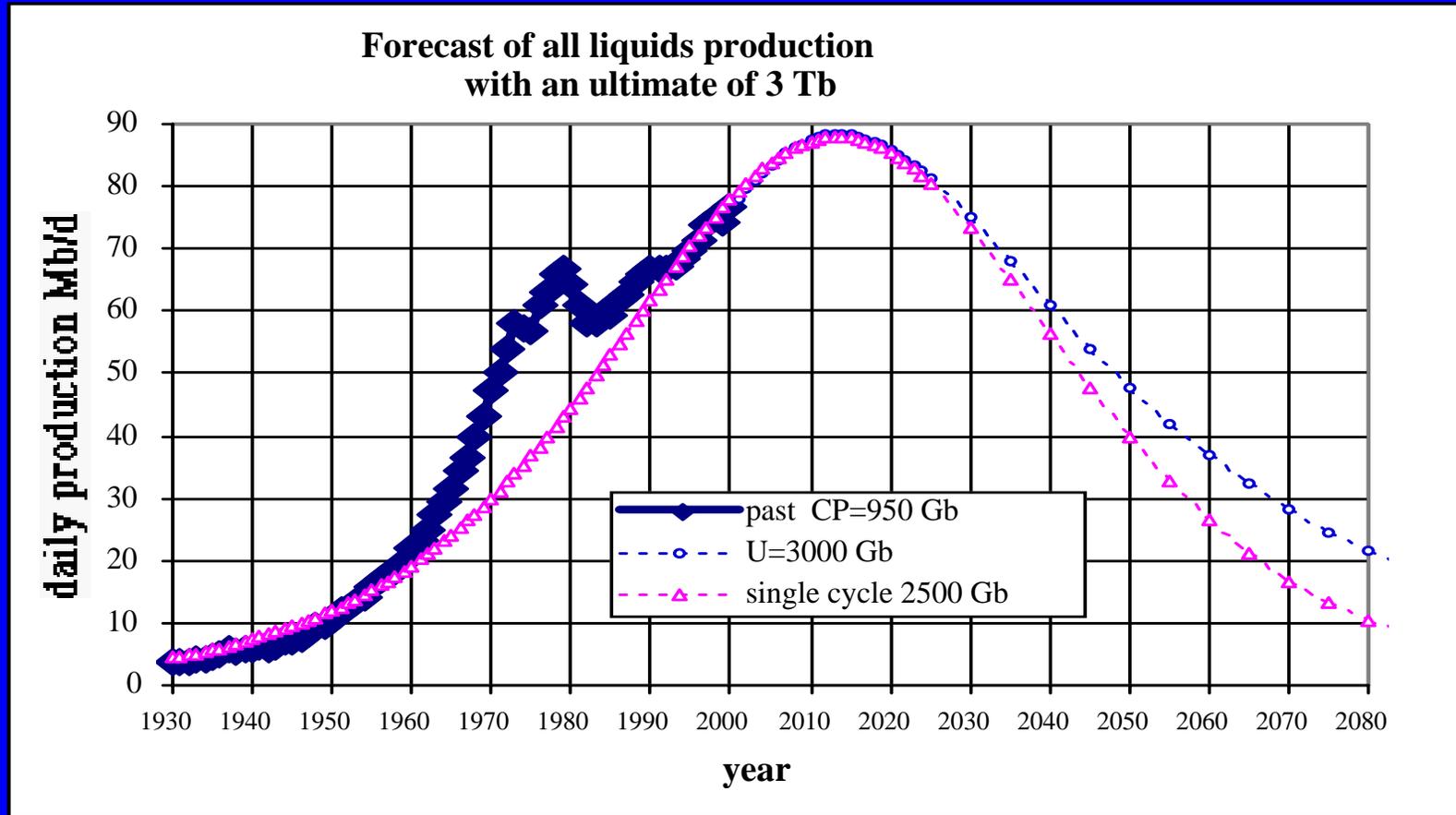
# Comparison of FSU Production Predictions



# Production outside OPEC



# Estimated Total World Production (Laherrere, 2002)



# SUMMARY

- World oil production will peak in the 2010-2020 decade
- Production outside OPEC and FSU is presently at peak
- Based on revised reserve levels FSU production will peak at about 15 MMBOD in 2015
- OPEC production will peak around 2020-2025
- As the world shifts to natural gas, Russian share of Condensate and NGL should eventually reach 30-40%
- During the period 2010-2020, Russia and Caspian will be producing one third of world oil outside OPEC