

FIC/Long Range Study
By David Bradley (Penn State U)

(There are 5 figures attached; #1 is the budget data; #2 is the UNOLS fleet usage; #3 is a notional version of the UNOLS fleet capacity vice usage (#2 and #3 are really the same, but if the message is excess capacity, I would prefer a simpler display, like #3; #4 is a nominal fleet availability and new ship construction plan, by decade; #5 is extracted from the Task Force Report on Interagency Ocean Policy, illustrating the (more or less) EEZ coverage the US is responsible for.)

Bottom line; We have a near term sales job ahead of us; longer term, we have to propose a credible ship building plan in the absence of any real long term information regarding the requirements of the seagoing community.

If you combine the sponsor budgets and the Fleet utilization, Problem #1 immediately appears: Excess Capacity (That is, budgets are not really declining, but ship usage is). That is what I would call a “near term” problem; it can be made to go away, certainly painfully, but “easily” doable. Solution (that is not painful)? New customers; more use by old, but not traditionally big customers (Note: Figure 3 is not accurate – needs data base), Fleet usage, is accurate, as it is what you gave me, but Fleet Capacity is just nominal, as I didn’t combine the optimum usage by individual ships or ship class to create the flat line I used and labeled Fleet Capacity; to be credible, someone should do that, if this figure is used for public consumption. Figure 1 should also have NOAA’s budget figures on it, which I don’t have). Traditionally we have provided help to the Navy to fill in for their “White Ship” shortfalls or casualties; we have also provided help to NOAA for more or less the same reasons. These are potential “market places” that will require effort (read sales) to convince these sponsors we have a better mousetrap. An example: The Coast Guard is totally undermanned; the Department of Homeland Security has an enormous budget and relies on the CG and DoD (Navy) to provide at-sea and coastline security functions; we are not going “gray” (Meaning manning weapons!!)----

but many of the security functions are observation/reporting oriented; not confrontational in nature, and could easily be accomplished by UNOLS and with minimal impact on science operations.

The fact that budgets are stable or increasing; and ship utilization is declining is due either to, a community change of approach to solving the scientific issues, or we have priced ourselves out of the market. I could be wrong on this, but my sense is that costs have mainly followed inflation; they have not step-function increased due to some set of issues requiring an unexpected investment. Given that, I don't think we can or would want to start a "scientific method" change campaign; we are a service provider, not a scientific problem solving investor. (We have to accept this situation for what it is, and deal with the consequences)

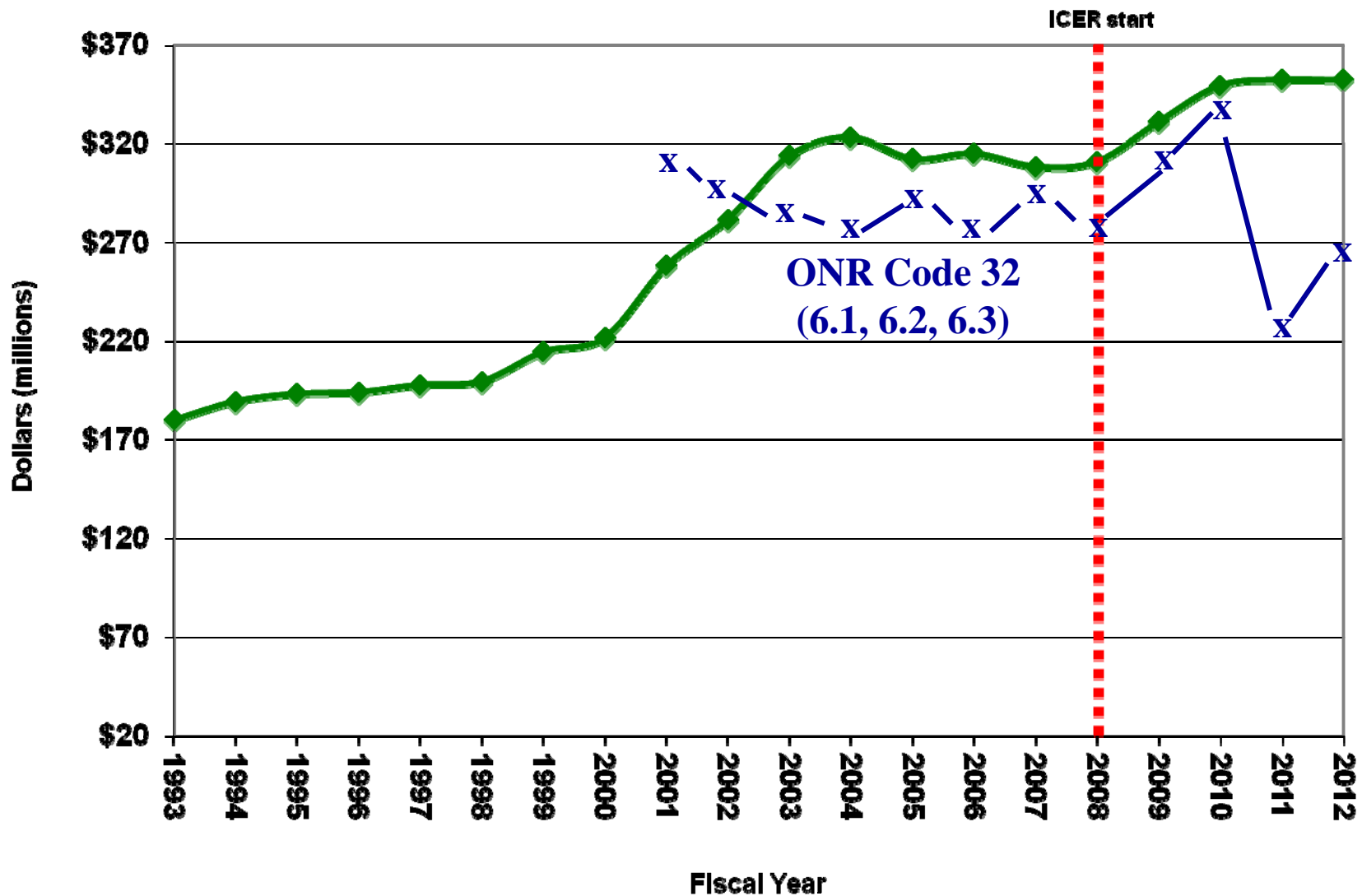
The 4th Figure is notional (the accurate way to do this is to use the optimum usage for the platforms we have right now for decades 2000-2010 and 2010-2020), After that, based on expected ship life, the portions of each vertical bar would start to decline; eventually, if no replacements, the vertical "bar" would end up at zero. Ideally, I would like to have this same graph, but now labeled sponsor scientific mission requirements, over the same time frame; That, I believe is not possible. For me, this notional graph leads to Problem #2: Capability Mismatch with Requirements.

Reality is; a ship is built with certain requirements in mind; its lifetime exceeds those requirements, leading to the square peg, round hole scenario. The other part of reality; no one can either afford to scrap and rebuild, or modify to effectively address the requirements change. What to do? A thought: go for two classes of ships only; global and regional; make them more modular and flexible to requirements and (this part may be mission impossible!) make their daily costs a function of the requirement; in simple terms, if the daily cost for a global ship to do a global mission is say, \$40K; then for a ocean mission, the daily cost for the global ship would be reduced to \$30K.

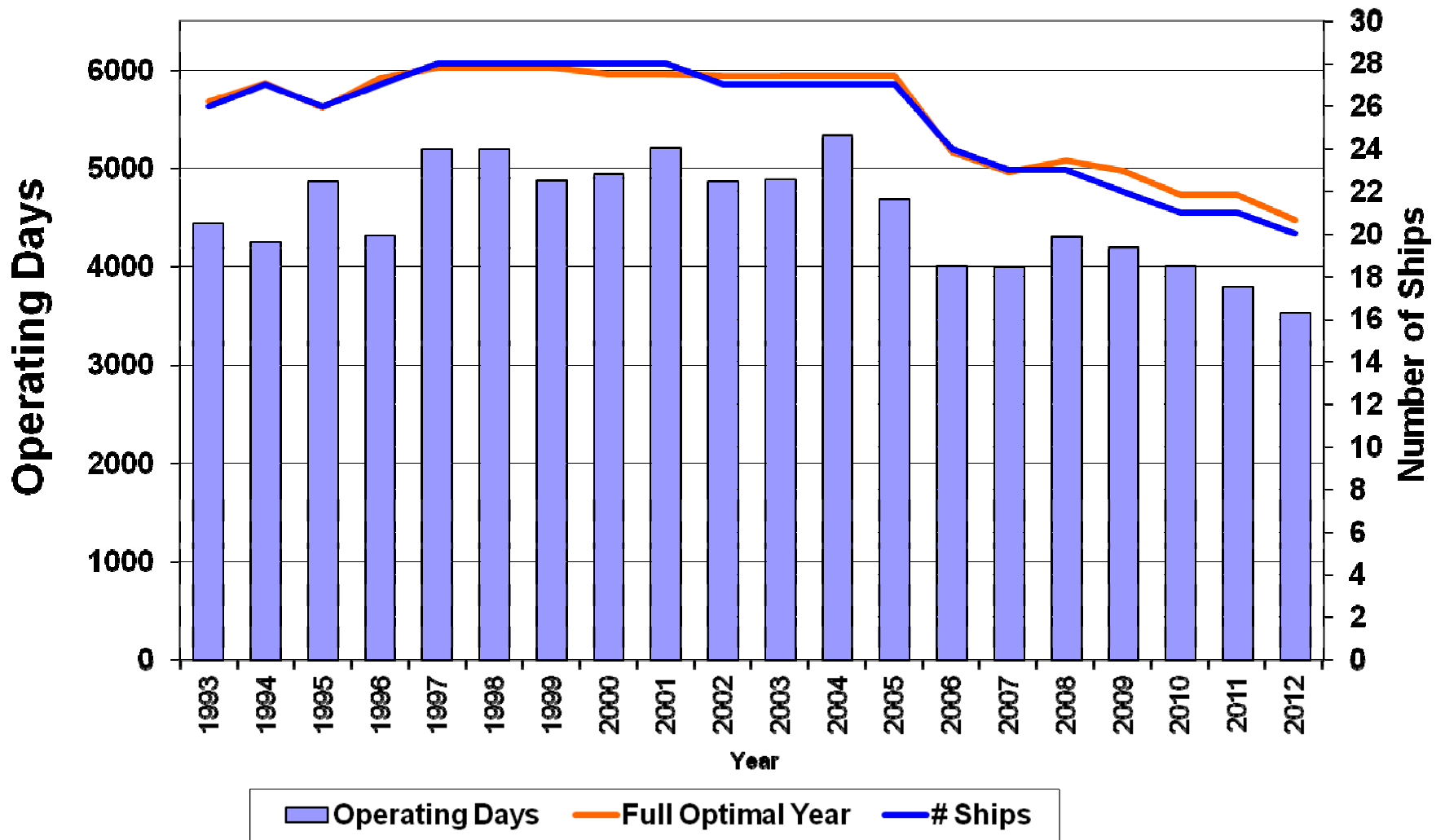
(The assumption is, the crewing and equipments required would decrease, with the “smaller” mission; which I recognize, is fraught with danger!)

New requirements on the Horizon: A quick read of the Task Force Report on Interagency Ocean Policy leads to, (in addition to “standard” science efforts), monitoring, compliance, regulation, protection functions; if implemented, will require significant seagoing resources (see figure 5); quite frankly, most of these functions require pretty minimal technical support, but do require the legs and on-station time available in the larger ships we have. So part of the sales effort we face will be convincing those agencies to employ our resources vice build and field, or rent their own.

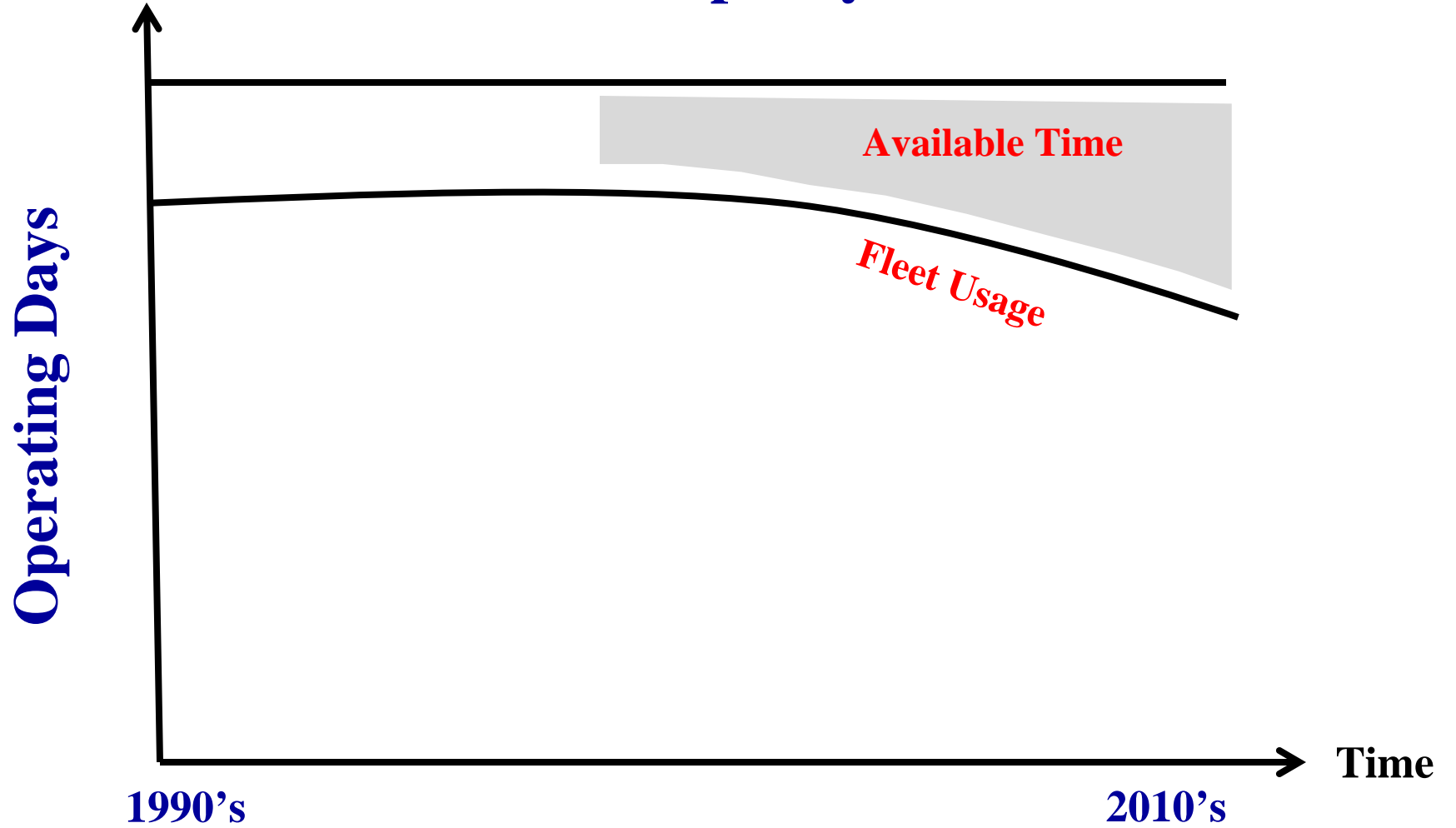
OCE Annual Budget

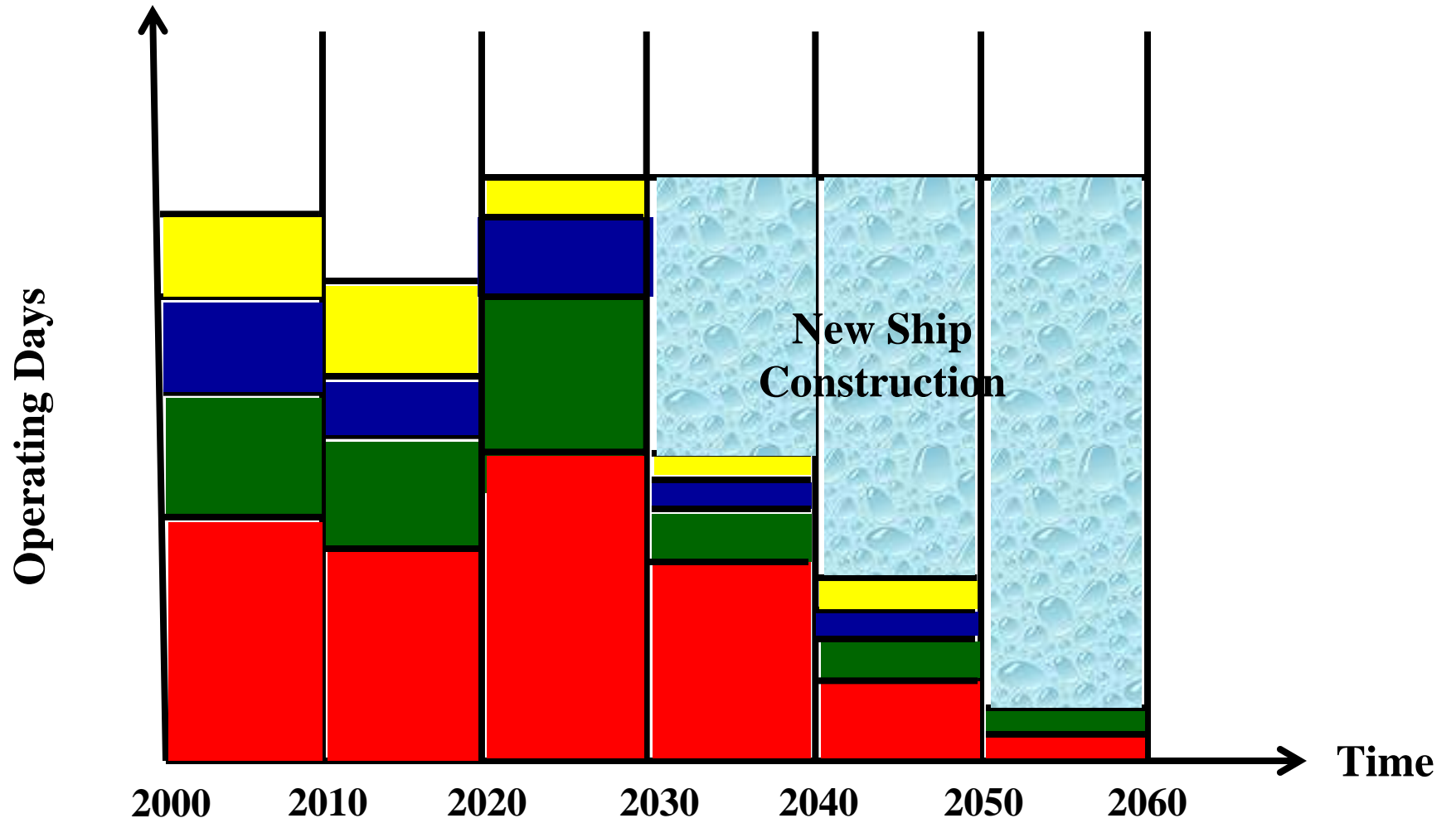


UNOLS Fleet Utilization

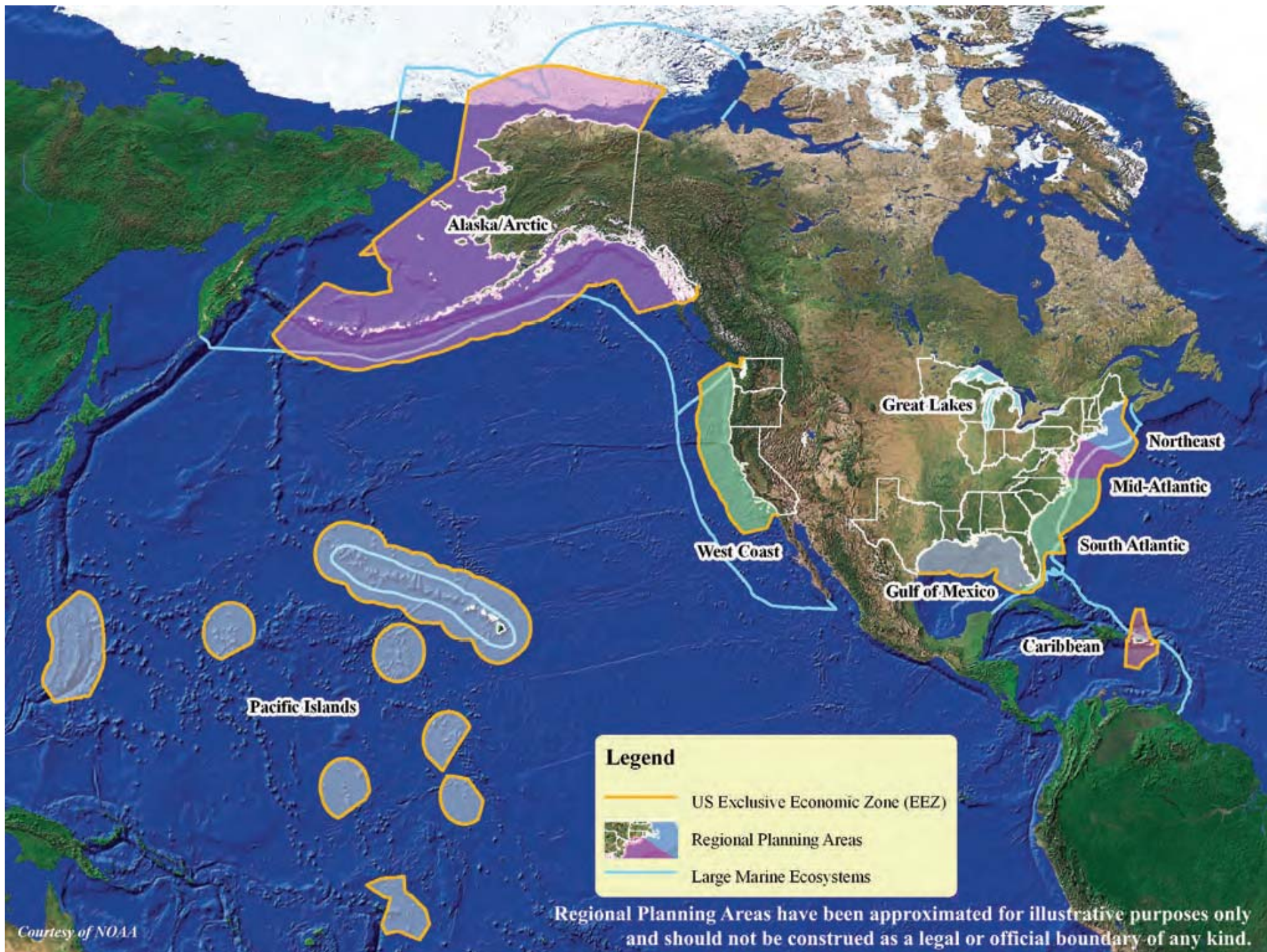


Fleet Capacity





Global (red)
Ocean (green)
Regional (blue)
Coastal (yellow)



Courtesy of NOAA

