



Lobster Fishery Management Plan, Control Rule Toolbox

Table 5.4 Control rule toolbox: The seven regulatory options (**not in order of rank**) available to decision makers if threshold reference points are exceeded, and the relative benefits vs. limitations of each potential regulatory change. The mechanics and implementation of each regulatory change is described in the text. Precaution should be exercised before taking action to determine if external factors (i.e. new regulations, market dynamics, environmental changes) have caused or contributed to the reference point(s) being exceeded.

Regulatory options	Benefits	Challenges/Limitations
1) Adjust the harvest rate (aka fishing mortality, <i>F</i>) by changing trap limit (commercial) and bag limit (recreational)	<ul style="list-style-type: none"> Restores economic performance (CPUE) and stock status (SPR) Directly addresses most common management problem in lobster fisheries (high harvest rates due to high effort) Among options here, highest degree of stakeholder support Applicable when performance/stock increases (i.e., harvest rates can be scaled upwards in absence of crisis, or after recovery) Accentuates the multiple benefits of trap limit for other MLMA objectives 	<ul style="list-style-type: none"> Mechanisms of harvest rate reduction not identical for both sectors: commercial = trap reduction, recreational = bag limit.
2) Increase minimum size limit	<ul style="list-style-type: none"> Ease and immediacy of implementation and enforcement (applies to both sectors in same manner) Directly protects stock and increases SPR Impact easily incorporated into stock assessment 	<ul style="list-style-type: none"> Severe economic impacts in southern portions of range where most animals in catch are barely legal Does not directly address likely root cause of problem: high harvest rates Does not improve economic performance No benefit to other MLMA objectives Very likely to reduce fishery yield
3) TAC	<p><u>Without individual quota system (e.g., ITQ)</u></p> <ul style="list-style-type: none"> Can provide long term stability to catch Adjustments and rebuilding measures are simple and efficient <p><u>With individual quota system (e.g., ITQ)</u></p> <ul style="list-style-type: none"> Can provide long term stability to catch Can ease “race to fish” Can encourage fishing during high market value periods (unless cost of fishing is higher then), this is often later in the season for California spiny lobster – can have economic benefits Can lead to effort reduction (but not guaranteed) TAC/ITQ can be tuned to other fishery performance measures (e.g., CPUE); maximize efficiency 	<p><u>Without individual quota system (e.g., ITQ)</u></p> <ul style="list-style-type: none"> Insufficient data to establish TAC Encourages “derby” fishery (“race to fish”) Exacerbates high effort levels (“race to fish”) Safety compromised (during “race to fish”) Allocation across sectors difficult (commercial vs. recreational) Difficult to monitor recreational catch against a TAC (current system is not sufficient) Recruitment/stock size variability problematic for setting optimal/appropriate TAC Benefits to broader MLMA objectives not clear <p><u>With individual quota system (e.g., ITQ)</u></p> <ul style="list-style-type: none"> Insufficient data to establish TAC Difficult to monitor recreational catch against a TAC (current system is not sufficient) Allocation both across and <u>within</u> sectors difficult Recruitment/stock size variability problematic for setting optimal/appropriate TAC/quota



Table 5.4 (continued...)

<p>4) Male lobster only fishery</p>	<ul style="list-style-type: none"> • Ease and immediacy of implementation and enforcement (applies to both sectors in same manner) • Directly protects stock and increases SPR; similar method works in <i>H. americanus</i> fishery (V-notch program) and crab fisheries (i.e., dungeness) • Enhances other MLMA objectives: (1) Ecological benefits of large animals in food chain, (2) non consumptive users 	<ul style="list-style-type: none"> • If implemented alone, does not reduce high harvest rates in fished areas (potential root of problem), thus does not improve economic performance • Reduced yield to fishery, likely large effect • Mating dynamics unknown, possible that small males might not fertilize eggs of larger protected females due to (1) sperm limitation, (2) antagonistic interaction between large females and small males during mating
<p>5) Maximum size limit</p>	<ul style="list-style-type: none"> • Ease and immediacy of implementation and enforcement (applies to both sectors in same manner) • Directly protects stock and increases SPR • Impact easily incorporated into stock assessment • Enhances other MLMA objectives: (1) Ecological benefits of large animals in food chain, (2) non consumptive users 	<ul style="list-style-type: none"> • Benefits (increases in SPR) are minimal at high harvest rates because few animals survive to large size • Does not directly address likely root cause of problem: high harvest rates • Does not improve economic performance • Reduced yield to fishery
<p>6) Change season length</p>	<ul style="list-style-type: none"> • Ease and immediacy of implementation and enforcement (applies both sectors in same manner) • Relatively easy to estimate benefits from historical catch records 	<ul style="list-style-type: none"> • If implemented alone, does not reduce high harvest rates in fished areas (potential root of problem), thus does not improve economic performance • The timing of catches made within season varies regionally (high early season in south, more prolonged in north), thus impact will bear regional disadvantages. Not likely to be uniformly effective throughout range of fishery • Shortens and temporally eliminates access to market – could have long term repercussions?
<p>7) Expand partial closures (i.e., those that affect a single sector) so that they provide full protection (e.g., Santa Monica Bay, jetties, Catalina)</p>	<ul style="list-style-type: none"> • Ease and immediacy of implementation and enforcement (applies to both sectors in same manner) • Directly protects stock and increases SPR • Protected areas can be directly incorporated into stock assessment 	<ul style="list-style-type: none"> • If implemented alone, does not reduce high effort in fished areas (potential root of problem), thus does not improve economic performance • Increased congestion in open areas • Likely to reduced yield, reduce public access • How to estimate value of jetties for including the protected stock in stock assessment?