

Marine Life Protection Act Initiative



Additional Level of Protection Designations for the MLPA South Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team

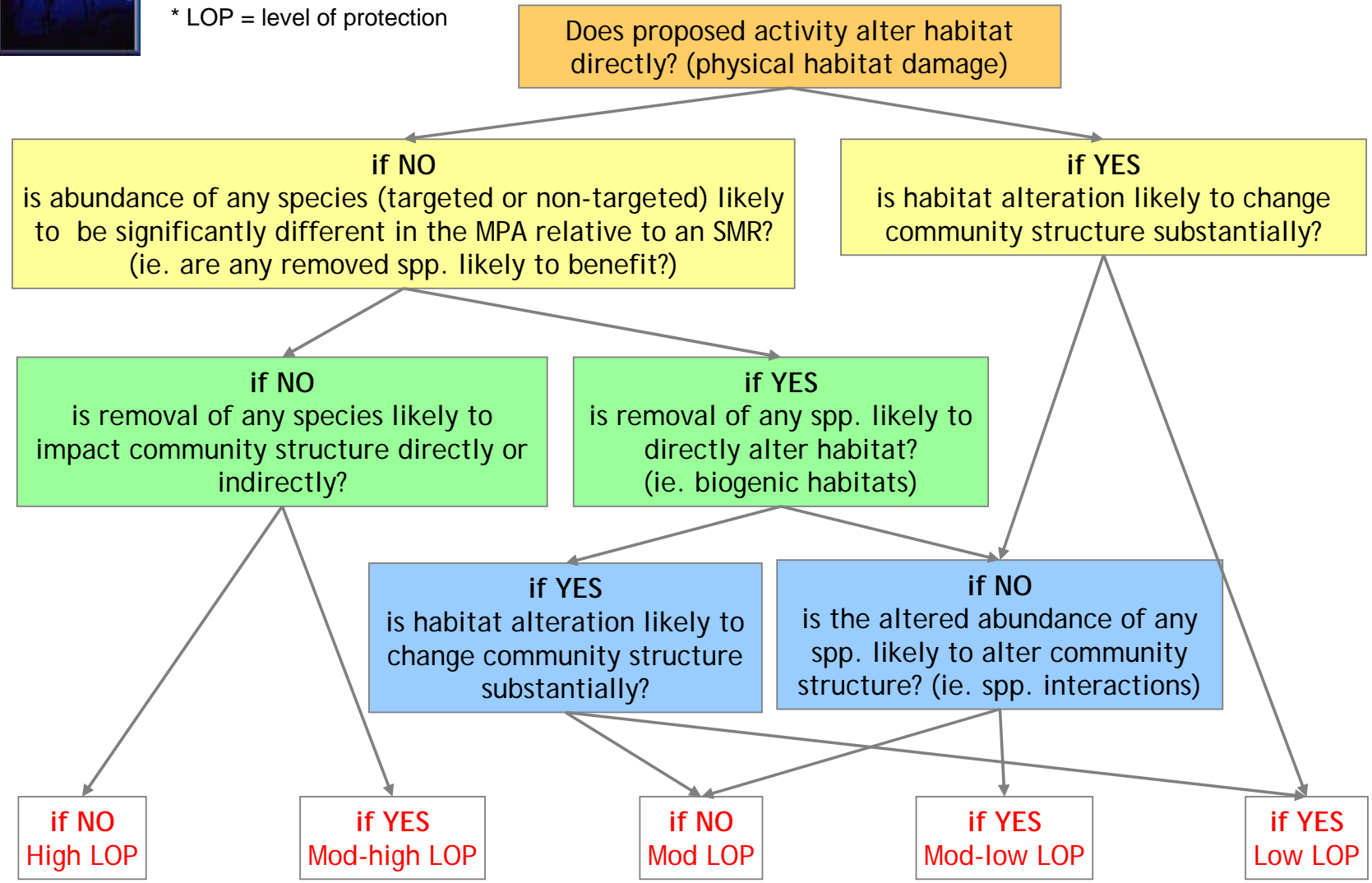
April 1, 2009 • Los Angeles, CA

Presented by Dr. Ray Hilborn



Conceptual Model for Determining LOP*

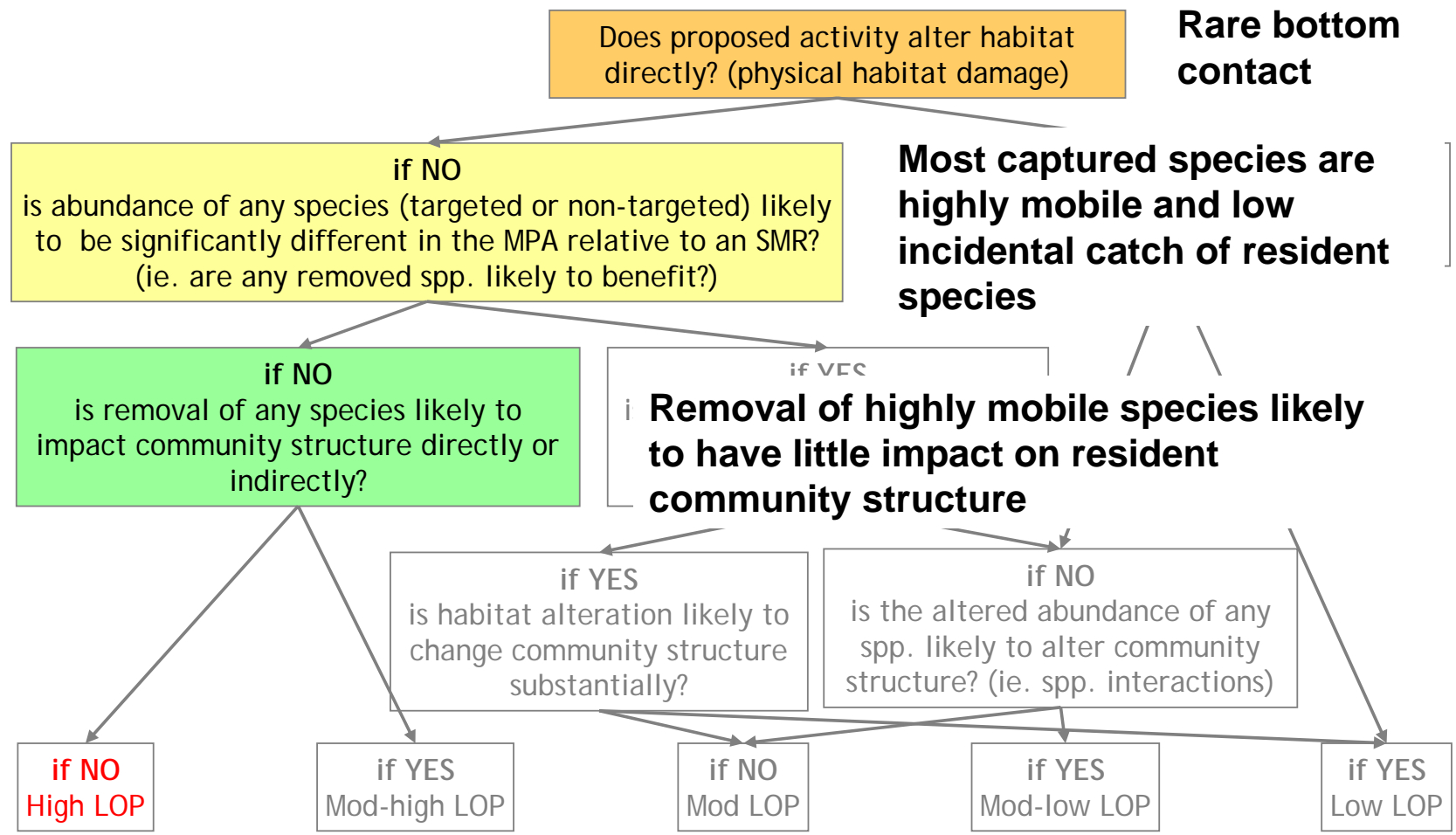
* LOP = level of protection





Example: Coastal Pelagic Finfish & Squid

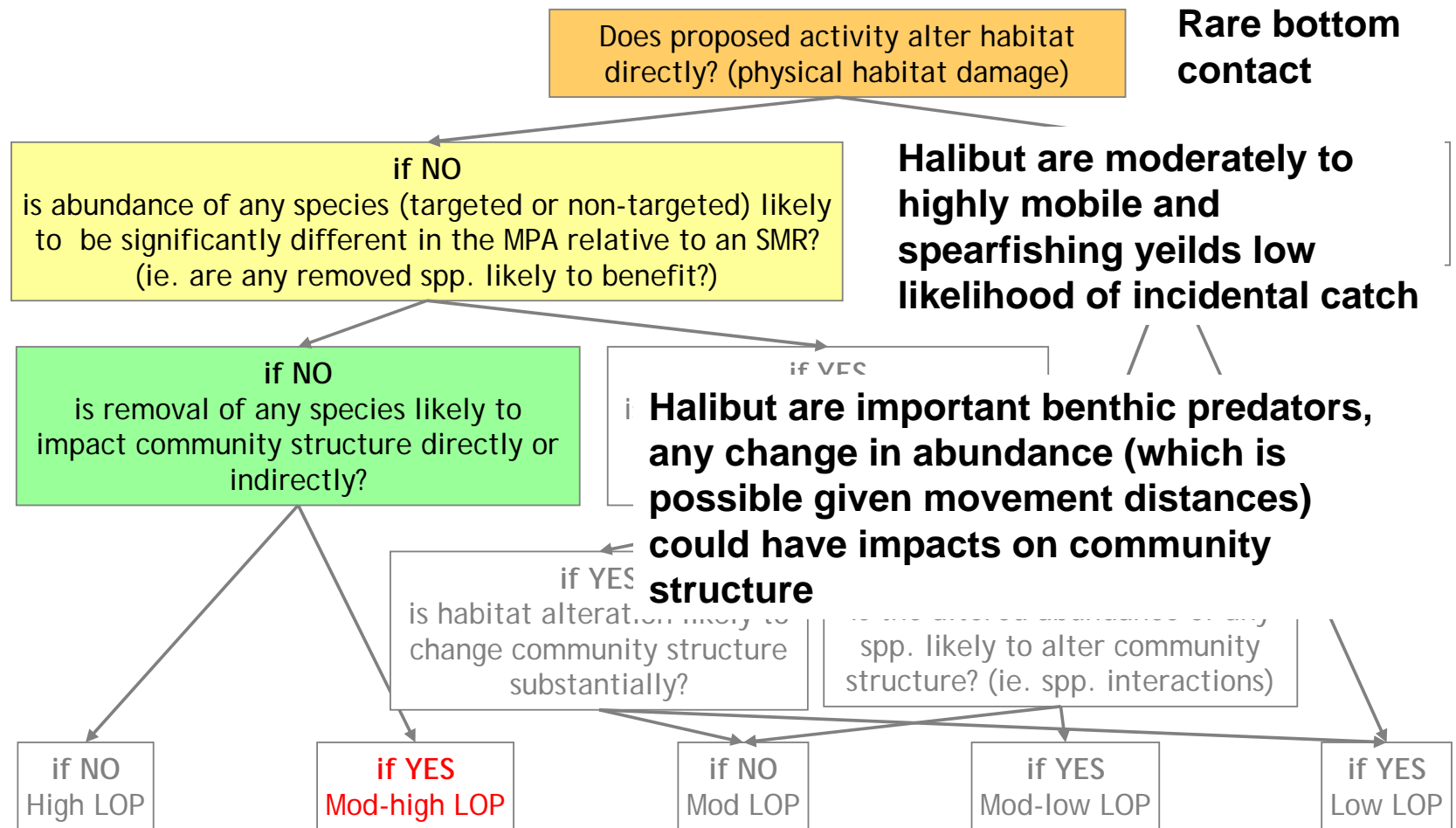
Method: Pelagic seine, dip-net, or crowder





Example: Halibut

Method: Spear





Example: Catch and Release

Method: Hook and line with single barbless hooks and artificial lures at <10 meters

Does proposed activity alter habitat directly? (physical habitat damage)

Rare bottom contact

if NO
is abundance of any species (targeted or non-targeted) likely to be significantly different in the MPA relative to an SMR? (ie. are any removed spp. likely to benefit?)

Single barbless hooks and artificial lures reduce hooking mortality
Shallow fishing depths (<10m) reduce barotrauma leading to high survivorship

if NO
is removal of any species likely to impact community structure directly or indirectly?

if YES
is removal of any species likely to directly alter habitat?

Many targeted species (kelp bass, spotted sand bass) are important resident predators, any change in abundance—which is possible given variable sensitivity to handling—could have impacts on community structure

if NO
High LOP

if YES
Mod-high LOP

if NO
Mod LOP

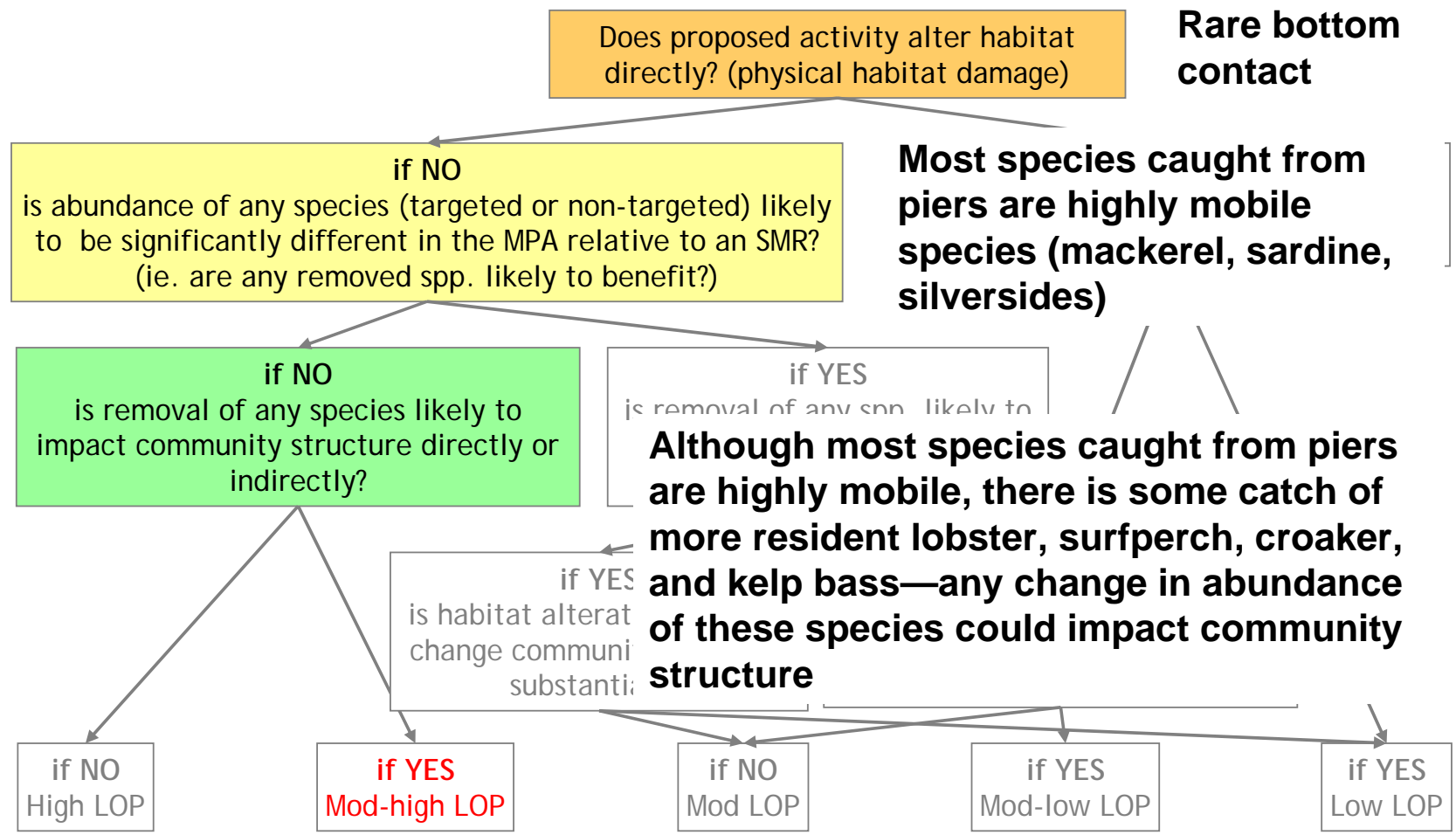
if YES
Mod-low LOP

if YES
Low LOP



Example: Pier-Based Fishing

Methods: Hook and line, hoop-net





LOP Designations

	Level of Protection	MPA Type	Activities Associated with this Level of Protection
	Very high	SMR	No take
	High	SMCA	Coastal pelagic finfish and bonito (pelagic seine, dip-net, crowder), market squid (pelagic seine, dip-net, crowder); jumbo squid (squid jigs); swordfish (harpoon); In water depth > 50m: pelagic finfish, bonito and white seabass (H&L)
	Mod-high	SMCA	Catch and release in <10m water or using surface gear (H&L single barbless hooks and artificial lures only); pier-based fishing (H&L, hoop-net); halibut (spear); In water depth 30<50m on mainland: pelagic finfish, bonito and white seabass (H&L)
	Moderate	SMCA SMP	Spot prawn (traps/pots); sea cucumber (scuba/hookah); grunion (hand harvest); giant kelp (hand harvest); clams (hand harvest)
	Mod-low	SMCA SMP	Catch and release in >10m (H&L); shore-based finfish (H&L); kelp bass, barred sand bass, lingcod, cabezon, and rockfish (H&L, spear); sheephead (H&L, spear, trap); spotted sand bass and halibut (H&L); lobster (trap, hoop net, scuba); urchin (scuba/hookah); rock crab and Kellet's whelk (trap); In water depth <50m at islands and <30m on mainland: pelagic finfish, bonito and white seabass (H&L)
	Low	SMCA SMP	Rock scallop (scuba); mussels (hand harvest); giant kelp (mechanical harvest); marine algae other than giant and bull kelp (hand harvest)