



Assessing Impacts of Catch-and-Release Practices on  
Striped Bass  
Preliminary Findings

Injuries are directly related vitality impairments because they can affect neural, muscle, and organ functions

Injury Symptom Assessment (ISA)		
Injury Symptom	Description	Injury Symptom Score
Wounding or Hook Damage	Lip or jaw damage, Nicks, cuts or gashes on body from hooks	0 = Absent 1 = Present
Bleeding	Bleeding from hooking site or as a result of hookup	0 = Absent 1 = Present
Abrasion	Rubbed or scrapped area(s) on body	0 = Absent 1 = Present
Mucous Loss	Visible signs of mucous (slime) loss	0 = Absent 1 = Present
Scale Loss	Visible signs of scale loss	0 = Absent 1 = Present
ISA Score = Proportion of injury symptoms in an individual fish		
IS Score = Number of symptoms present / Total number of possible symptoms		

Impairments to reflex actions or behavior are potential measures of vitality loss after exposure to angling stressors.

Reflex Action Impairment Assessment (RAIA)		
Injury Symptom	Description	Injury Symptom Score
Tail Grab	Fish attempts to swim away vigorously when tail is grabbed in water	0 = Not Impaired 1 = Impaired
Body Flex	Fish vigorously flexes body when restrained horizontally	0 = Not Impaired 1 = Impaired
Head Complex	Steady movement of gills and mouth that facilitate respiration	0 = Not Impaired 1 = Impaired
Orientation Equilibrium	Ability to reorient itself after being placed upside down in water	0 = Not Impaired 1 = Impaired
RAI Score = Proportion of reflexes that are impaired in an individual fish RI Score = Number of impairments present / Total number of possible reflexes		

### Striped Bass Rapid Assessments with the Berkley Striper Club

Date	Number of Striped Bass Assessed
11/21/2015	3
12/12/2015	3
12/02/2016	11
12/03/2016	3
12/01/2017	2
12/02/2017	8
12/01/2018	16
Total Fish Assessed	46
Total Scoring on the Injury Assessment (IS) = 17	
Total Scoring on the Reflex Action Impairment Assessment (RI) = 12	

## Preliminary Findings

We have concluded that hooking location had a direct impact on the total handling time of fish assessed.

- If hooked in a non-critical location, mean handling time was 98 seconds
- If hooked in a critical location, mean handling time was 136 seconds

Total handling time (landing to release) had an impact on the reflex action impairment score (RI). Hooking location also had an impact on the injury assessment index score (IS)

- If hooked in a non-critical location, mean score was  $< 0.1 / 1.0$
- If hooked in a critical location, mean score was  $0.5 / 1.0$

For fish that scored, as the handling time increased, the RI score increased. It was determined that when handling time reached 78 seconds, fish began to score

- However, only 10% of fish handled for under 90 seconds exhibited reflex impairments
- 41% of fish handled for over 90 seconds exhibited reflex impairments

**Based on these results, we recommend that anglers attempt to keep the handling time from landing to release to 90 seconds or less**

The duration of air exposure also influences recovery time of released fish and can lead to sublethal effects such as impairments to swimming performance as well as post-release mortality. Furthermore, we know that stress from air exposure is worse when a fish is exhausted, injured, or water temperatures are beyond the normal. If at all possible, striped bass should be unhooked quickly and carefully in the water to reduce stress. If they must be removed from the water to be unhooked, always try to minimize the amount of time they are out of the water, handle them as little as possible, and release them quickly.

While we have yet to quantify the impacts of various durations of air exposure on striped bass, we hope to initiate additional studies that will allow us to develop a recommendation for maximum time out of water for stripers intended to be released. Furthermore, although there is currently no universal air exposure threshold for all species, based on a recent review of existing studies, researchers have suggested that a cautious target for time out of water should be 10 seconds.