SPECKLED TROUT

*Cynoscion nebulosus*

Sometimes known as Spotted Seatrout, Spotted Weakfish, Spotted Squeteague, Spotted Trout, Speckles, Speckled Trout, Salmon Trout, Simon Trout

SUMMARY

Speckled Trout grow fast, reach sexual maturity after their first year, and spawn millions of eggs over several months, all of which are favorable life history characteristics. Contrary to the name, Speckled Trout are not a trout species, instead being related to drums. Speckled Trout are mostly caught in the Gulf of Mexico, where most populations have medium abundance levels. Speckled Trout are predominantly found in estuaries and seagrass habitats, which are areas in the Gulf of Mexico that are degraded from pollution, dredging and channeling. The main fishing method of hook and line gear, however, causes little damage to the seafloor and likely results in low levels of bycatch.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Points</th>
<th>Final Score</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life History</td>
<td>3.00</td>
<td>2.40 - 4.00</td>
<td>![Fish Green]</td>
</tr>
<tr>
<td>Abundance</td>
<td>2.00</td>
<td>1.60 - 2.39</td>
<td>![Fish Yellow]</td>
</tr>
<tr>
<td>Habitat Quality and Fishing Gear Impacts</td>
<td>3.00</td>
<td>0.00 - 1.59</td>
<td>![Fish Red]</td>
</tr>
<tr>
<td>Management</td>
<td>1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bycatch</td>
<td>3.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Final Score</strong></td>
<td><strong>2.60</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Color
LIFE HISTORY

Core Points (only one selection allowed)

If a value for intrinsic rate of increase ('r') is known, assign the score below based on this value. If no r-value is available, assign the score below for the correct age at 50% maturity for females if specified, or for the correct value of growth rate ('k'). If no estimates of r, age at 50% maturity, or k are available, assign the score below based on maximum age.

1.00 Intrinsic rate of increase <0.05; OR age at 50% maturity >10 years; OR growth rate <0.15; OR maximum age >30 years.

2.00 Intrinsic rate of increase = 0.05-0.15; OR age at 50% maturity = 5-10 years; OR a growth rate = 0.16–0.30; OR maximum age = 11-30 years.

3.00 Intrinsic rate of increase >0.16; OR age at 50% maturity = 1-5 years; OR growth rate >0.30; OR maximum age <11 years.

Speckled Trout can live to 18 years of age (Johnson and Seaman 1986) but maximum age varies between regions, being only 9 years in Florida for example. They can grow to over two feet (60 cm) in length and weigh over eight pounds (4 kg) (FWC 2011).

Speckled Trout begin generally sexual maturity and spawn by the end of their first year of life (Sundararaj and Suttkus 1962; FWC 2011), but can reach maturity as late as 3-4 years of age (Moody 1950; Klima and Tabb 1959; Lorio and Perret 1980). Length at maturity generally occurs from 21 to 25 cm for females and 20 to 24 cm for male Speckled Trout (Moody 1950), but it does vary between locations and can occur at larger sizes. For example, in Louisiana, sexual maturity starts at 24 cm and in Apalachicola, FL at 29 cm (Brown-Peterson et al. 2002). In south Texas, female sexual maturity is reached between 23 and 30 cm, while males reach sexual maturity at a smaller size of 20 cm (Brown-Peterson et al. 1988). In the Mississippi Gulf coast, Speckled Trout reach sexual maturity around 23 and 20 cm (female and male respectively) and one year of age (Brown-Peterson and Warren 2001).

Growth rates vary between locations, caused by genetic variation and differences in environmental conditions like water temperature and salinity (Brown-Peterson et al. 2002). For example, in the Indian River Lagoon and Apalachicola Bay Florida, Speckled Trout grow faster than in southwest Florida (Murphy and Taylor 1994). Growth rates range from 0.7 to 13 cm/year (Johnson and Seaman 1986) and the growth coefficient has been estimated at 0.09 to 0.36 (Rutherford et al. 1982; Murphy and Taylor 1994). Growth appears to stop or at least decrease during the winter (Guest and Gunter 1958; Tabb 1961) and is the fastest during late summer (Welsh and Breder 1924; Pearson 1929).
Points of Adjustment (multiple selections allowed)

-0.25 **Species has special behaviors that make it especially vulnerable to fishing pressure** (e.g., spawning aggregations; site fidelity; segregation by sex; migratory bottlenecks; unusual attraction to gear; etc.).

Juvenile Speckled Trout can form schools of up to 50 individuals, continuing to school until 4 or 5 years of age (Perret et al. 1980). There is some indication of female site fidelity to natal spawning estuaries, which may play an important role in the maintenance of subpopulations (Golf et al. 1999). These factors do not make Speckled Trout especially vulnerable to fishing pressure, so no points are subtracted.

-0.25 **Species has a strategy for sexual development that makes it especially vulnerable to fishing pressure** (e.g., age at 50% maturity >20 years; sequential hermaphrodites; extremely low fecundity).

-0.25 **Species has a small or restricted range** (e.g., endemism; numerous evolutionarily significant units; restricted to one coastline; e.g., American lobster; striped bass; endemic reef fishes).

Speckled Trout are found in coastal waters from Cape Cod, MA to the Bay of Campeche, Mexico and are common in the Gulf of Mexico, specifically off eastern Louisiana, South Texas and Mississippi (Lassuy 1983). Speckled Trout in Florida, Louisiana and Texas are from different populations (Ward et al. 2006). In Florida, there are at least five distinct populations (1. northeast from northern Volusia county to the Atlantic state border, 2. southeast from southern Martin county north to Volusia county, 3. Biscayne Bay, 4. Florida Bay/Keys and 5. Gulf coast from Florida Bay through the Florida panhandle) (FWRI 2010). In Texas, there is evidence to support the theory of three distinctive subpopulations (Anderson and Karel 2010).

-0.25 **Species exhibits high natural population variability driven by broad-scale environmental change** (e.g. El Nino; decadal oscillations).

+0.25 **Species does not have special behaviors that increase ease or population consequences of capture OR has special behaviors that make it less vulnerable to fishing pressure** (e.g., species is widely dispersed during spawning).

+0.25 **Species has a strategy for sexual development that makes it especially resilient to fishing pressure** (e.g., age at 50% maturity <1 year; extremely high fecundity).

Speckled Trout can reach sexual maturity and begin to spawn by the end of their first year of life (Sundararaj and Suttokus 1962). Fecundity or the number of eggs produced is high, and appears to increase with age (Sundararaj and Suttokus 1962; Brown-Peterson and Warren 2001) and size (Brown-Peterson et al. 2002). For example, one study estimated fecundity to range from 15,000 to 1.1 million eggs (Pearson 1929; Tabb 1961), while Speckled Trout from South Carolina have a batch fecundity of 145,452 to 529,976
eggs which equals an annual fecundity of 3.2 to 17.6 million eggs (Roumillat and Brouwer 2004). In Louisiana, batch fecundity for females between 2 and 4 years of age ranges from 102,369 to 511,859, with annual fecundity estimates of 9-11 million eggs per female (Nieland et al. 2002).

Spawning occurs in estuaries (Lassuy 1983) and is largely controlled by water temperature (Kupschus 2004) and salinity (Kucera et al. 2002). Spawning typically occurs at temperatures greater than 21 °C (Simmons 1951) but decreases at 30 °C (Jannke 1971; Kupschus 2004). For example, in Florida, optimum spawning temperature is 29 °C, with higher temperatures curbing spawning activity (Kupschus 2004). Spawning occurs at night in lagoons, bays, deep channels and areas near grassy flats (Tabb 1961).

The length of the spawning period appears to be inversely related to latitude (Hein and Shepard 1979) and is protracted. For example, spawning in southern Florida occurs in all months, with peaks in spring and fall (Jannke 1971). In Mississippi and Apalachicola Bay, FL, spawning occurs for five months, in Louisiana (spawning sites are commonly found in deep moving water that occurs between barrier islands and in open water channels that have a depth range of 3 to 50 m (Saucier and Baltz 1993) and Texas for six months and for seven in Charlotte Harbor, FL with peaks occurring between May and July (Brown-Peterson et al. 2002). In Ft. Myers/Cedar Key, FL spawning occurs from late March to September with a peak occurring from June through August (Moody 1950; Moffett 1961). In the Indian River Lagoon, FL spawning occurs from mid-April to late July, with a peak from April-June (Tabb 1961) and in the Everglades National Park, spawning occurs year round, with a peak in the spring and again in late summer/fall (Stewart 1961; Jannke 1971; Rutherford et al. 1982). In Tampa Bay, FL spawning likely occurs from the middle of the bay to near shore Gulf of Mexico waters and may occur from April through October, with peaks occurring in the spring and summer (McMichael and Peters 1989). In south Texas, Speckled Trout spawn from April through September (Brown-Peterson et al. 1988). The average number of days between spawning events has been reported to be around 2.5 days in Florida waters (Brown-Petersen et al. 2002; Kupschus 2004), 4-5 days in Louisiana (Nieland et al. 2002) and from every other day to once every three weeks in Texas (Brown-Peterson et al. 1988).

+0.25 Species is distributed over a very wide range (e.g., throughout an entire hemisphere or ocean basin; e.g., swordfish; tuna; Patagonian toothfish).

+0.25 Species does not exhibit high natural population variability driven by broad-scale environmental change (e.g., El Nino; decadal oscillations).

3.00 Points for Life History
ABUNDANCE

Core Points (only one selection allowed)

Compared to natural or un-fished level, the species population is:

1.00  Low: Abundance or biomass is <75% of BMSY or similar proxy (e.g., spawning potential ratio).

2.00  Medium: Abundance or biomass is 75-125% of BMSY or similar proxy; OR population is approaching or recovering from an overfished condition; OR adequate information on abundance or biomass is not available.

The only information about Speckled Trout abundance is for northwest and southwest Florida populations in the Gulf of Mexico. Commercial fishing for Speckled Trout declined drastically after the Florida ban on entanglement gear (e.g. gillnet) in 1995 (Murphy 2011). Specifically in the Gulf, the number of commercial fishing trips for this species decreased by 99% between the mid-1980’s until recent years (Murphy 2011). Population assessments conducted in 2003 and 2006 indicated the population in Florida is stable. The 2010 assessment indicated the southwest population is slightly higher (45%) than the management goal of 35% spawning potential ratio (SPR) (FWC 2011). The northwest population (37%) is close to this management goal (FWC 2011), however, there is some uncertainty about this value (Murphy 2011).

Abundances of Speckled Trout vary between locations and sexes (Murphy 2011). In northwest Florida, abundance of male Speckled Trout declined sharply after 1990 but has been fairly stable in recent years, while female abundance has fluctuated over time. In southwest Florida, male abundance has generally increased since 1987 and is now fairly stable. Female abundance in the southwest region also increased after 1987, but numbers are now decreasing. Abundances of the oldest ages of both males and females increased in the early 1990’s in both northwest and southwest Florida (Murphy 2011). Young of the year abundances in northwest Florida have been fairly stable over time but have decreased slightly since peaks in 2003/04 in the southwest region (Murphy 2011). Abundances of age-1 Speckled Trout (both sexes) in northwest Florida declined through 2003/04 but have since increased (Murphy 2011). In southwest Florida, there was a drastic decline in age 1 fish (both sexes) in 2005 followed by an increase (Murphy 2011).

Recruitment of Speckled Trout in northwestern Florida has been at average levels in recent years but below average in the southwest since 2005 (Murphy 2011). Fishing mortality in northwest Florida declined from 1988 through 1990 and has since fluctuated, with female fishing mortality rates being slightly higher than those in 1990 but males being slightly lower (Murphy 2011). In southwest Florida, fishing mortality declined gradually through 1996, with female mortality increasing slowly since then but male mortality staying steady (Murphy 2011).
We have assigned a medium score to account for the spawning potential ratio being above management goals and due to the fluctuations in abundance, recruitment and fishing mortality over time.

3.00 High: Abundance or biomass is >125% of BMSY or similar proxy.

Points of Adjustment (multiple selections allowed)

-0.25 The population is declining over a generational time scale (as indicated by biomass estimates or standardized CPUE).

Total abundance of male Speckled Trout in northwest Florida declined sharply after 1990 but has been fairly stable in recent years, while in southwest Florida, abundances increased since 1987 and have fluctuated somewhat but have remained fairly stable since (Murphy 2011). Female abundance increased in the southwest region of Florida after 1987, decreased again slightly in the early 1990’s, followed by an increase through 2004 but abundances have since declined (Murphy 2011). In northwest Florida, female abundance has fluctuated over time (Murphy 2011). We have not subtracted points due to the variability in abundances, with no clear trend over time.

-0.25 Age, size or sex distribution is skewed relative to the natural condition (e.g., truncated size/age structure or anomalous sex distribution).

In northwest Florida, there was a reduction in the proportion of age-1 Speckled Trout during 1989/90 followed by a switch to ages 2 (females) and 3 (males) since the mid to late 1990’s (Murphy 2011). This was also seen in the southwest region of Florida but the change was much more pronounced (Murphy 2011). These changes occurred over ten years ago and because there is no current information about age distributions, no points are subtracted.

-0.25 Species is listed as "overfished" OR species is listed as "depleted", "endangered", or "threatened" by recognized national or international bodies.

-0.25 Current levels of abundance are likely to jeopardize the availability of food for other species or cause substantial change in the structure of the associated food web.

+0.25 The population is increasing over a generational time scale (as indicated by biomass estimates or standardized CPUE).

+0.25 Age, size or sex distribution is functionally normal.

+0.25 Species is close to virgin biomass.
Current levels of abundance provide adequate food for other predators or are not known to affect the structure of the associated food web.

Speckled Trout are opportunistic carnivores (Perret et al. 1980) and their diet consist of zooplankton, micro and macro invertebrates, detritus, and fish (Darnell 1961). Small Speckled Trout eat plankton, and copepods (Johnson and Seaman 1986; McMichael and Peters 1989; Holt and Holt 2000) and amphipods have been found in the diet of several size classes of Speckled Trout, although most predominately in larval fish (McMichael and Peters 1989). Larger Speckled Trout consume a larger portion of shrimp and fish (McMichael and Peters 1989), with the most commonly consumed fish including; anchovies, pinfish, silversides, mullet, croaker, menhaden, silver trout, snapper, gobies, sheepshead, grunts, toadfish, and mojarras (Moody 1950; Darnell 1958; Adams et al. 1973; Rutherford et al. 1982).

Speckled Trout are preyed on by ospreys (Johnson and Seaman 1986) as well as other fish species. Young of the year (YOY) Speckled Trout play an important part in estuaries because they are prey to birds and fish (Carr and Adams 1973; Johnson and Seaman 1986) and feed on a large number of invertebrate and fish species (Carr and Adams 1973; McMichael and Peters 1989). The abundance level of YOY Speckled Trout could impact the abundance of their prey (Johnson 1982) but there is no indication as to whether this has occurred in the Gulf of Mexico. Because it is unclear if abundance levels of Speckled Trout have impacted the associated food webs, we have not added points.

2.00 Points for Abundance

HABITAT QUALITY AND FISHING GEAR IMPACTS

Core Points (only one selection allowed)

Select the option that most accurately describes the effect of the fishing method upon the habitat that it affects

1.00 The fishing method causes great damage to physical and biogenic habitats (e.g., cyanide; blasting; bottom trawling; dredging).

2.00 The fishing method does moderate damage to physical and biogenic habitats (e.g., bottom gillnets; traps and pots; bottom longlines).
3.00 The fishing method does little damage to physical or biogenic habitats (e.g., hand picking; hand raking; hook and line; pelagic long lines; mid-water trawl or gillnet; purse seines).

Historically Speckled Trout have been commercially fished in Texas using gillnets, trammel nets, haul seines, otter trawls, hand lines, trotlines and splatter poles (Blanchet et al. 2001). In Florida waters, only around 2% of Speckled Trout landings come from the commercial sector (FWRI 2010) and due to fishing regulations, hook and line and cast nets are the only allowable gear (Blanchet et al. 2001). Entanglement gear, such as trammel nets, have historically been used in Mississippi to capture Speckled Trout but after 1996 hook and line gear has been the predominate gear used (Blanchet et al. 2001). In Louisiana, only rod and reel gear can be used to capture Speckled Trout (Blanchet et al. 2001) and Speckled Trout are not commercially harvested in Alabama (Blanchet et al. 2001). We have awarded a high score because hook and line gear is the most commonly used fishing method to catch Speckled Trout, which causes minimal damage to the sea floor (Morgan and Chuenpagdee 2003).

Points of Adjustment (multiple selections allowed)

-0.25 Habitat for this species is so compromised from non-fishery impacts that the ability of the habitat to support this species is substantially reduced (e.g., dams; pollution; coastal development).

Estuaries are an important habitat for Speckled Trout throughout their lifecycle, for both food and spawning (Etzold and Christmas 1979) and Speckled Trout tend to move only small distances within an estuary (Johnson and Seaman 1986). Tagging studies have shown Speckled Trout to remain within 30 miles of their point of release (Moffett 1961; Beaumariage 1969) and most of this movement is due to spawning, feeding, protection from predators, or low salinity or water temperature avoidance (Lorio and Perret 1980). For example, Speckled Trout move out of estuaries into deeper warm waters of bays and gulfs during the fall (Moffett 1961; Tabb 1966) and return to the estuaries to in late spring/early summer to spawn (Pearson 1929). Fall emigration from estuaries is reported to occur when water temperature reaches about 10 °C (Roelfs 1953) and immigration back into the estuaries occurs when the temperature ranges from 10-12 °C in North Carolina (Roelofs 1953), 17 °C in Georgia (Mahood 1974) and 21 °C in Texas (Simmons 1951). These migrations are less pronounced in the Gulf of Mexico (Lassuy 1983).

Common habitat needs for Speckled Trout include, a large amount of shallow brackish water, large grassy areas, refuge areas for colder weather, abundant food supply, and a suitable temperature range (Tabb 1958). Sea grass beds are important habitats for newly settled Speckled Trout (Neahr et al. 2010) and juvenile Speckled Trout prefer shallow vegetated areas of estuaries (Pearson 1929; Miles 1950; Perret et al. 1980). Adults prefer grass beds, creek mouths, live oyster beds, drop offs and wrecks, piling or stumps (ASMFC 2007).
Submerged aquatic vegetation (SAV) is considered Habitat Area of Particular Concern for Speckled Trout (ASMFC 1984) and in Tampa Bay, Florida SAV has increased in size due to strict water quality standards in recent years (Orth et al. 2006). However, coastal development throughout Speckled Trout range has resulted in the loss of estuarine habitat, which has negatively affected their populations, although the extent to which is not known (ASMFC 2007). In addition, populations of Speckled Trout can be affected by winter freezes, hurricanes, red tides or excessive inflows of freshwater (ASMFC 2007). Other possible threats to their habitat include dredging, damage to sea grass beds through recreational fishing, habitat alterations (conversion of wetlands to aquaculture, bulkheads, docks/marinas), pollution, sewage treatment/disposal, ditching, and channeling (ASMFC unknown).

-0.25 Critical habitat areas (e.g., spawning areas) for this species are not protected by management using time/area closures, marine reserves, etc.

-0.25 No efforts are being made to minimize damage from existing gear types OR new or modified gear is increasing habitat damage (e.g., fitting trawls with roller rigs or rockhopping gear; more robust gear for deep-sea fisheries).

-0.25 If gear impacts are substantial, resilience of affected habitats is very slow (e.g., deep water corals; rocky bottoms).

+0.25 Habitat for this species remains robust and viable and is capable of supporting this species.

+0.25 Critical habitat areas (e.g., spawning areas) for this species are protected by management using time/area closures, marine reserves, etc.

+0.25 Gear innovations are being implemented over a majority of the fishing area to minimize damage from gear types OR no innovations necessary because gear effects are minimal.

+0.25 If gear impacts are substantial, resilience of affected habitats is fast (e.g., mud or sandy bottoms) OR gear effects are minimal.

Hook and line gear has a minimal impact on bottom habitat.

3.00 Points for Habitat Quality and Fishing Gear Impacts
MANAGEMENT

Core Points (only one selection allowed)

Select the option that most accurately describes the current management of the fisheries of this species.

1.00 Regulations are ineffective (e.g., illegal fishing or overfishing is occurring) OR the fishery is unregulated (i.e., no control rules are in effect).

2.00 Management measures are in place over a major portion over the species’ range but implementation has not met conservation goals OR management measures are in place but have not been in place long enough to determine if they are likely to achieve conservation and sustainability goals.

In the Gulf of Mexico, Speckled Trout are managed under the spotted seatrout Fishery Management Plan, which is a cooperative planning effort made by the five Gulf states (Florida, Louisiana, Alabama, Mississippi and Texas) (Blanchet et al. 2001). There is no federal management of Speckled Trout (ASMFC 2011). Individual state management measures are outline below.

Speckled Trout management in Florida began in the late 1980’s and current regulations have been in place since 2000 (FWC 2011). There are three management regions, northeast, northwest and south (FWC 2011) and the goal of managers in Florida is to keep the Speckled Trout population at 35% of the spawning potential ration (FWC 2011). Management measures include, a commercial size limit of 15-24 inches, Speckled Trout must be landed whole and there is a daily limit of 75 fish (FCL 2000). There are also closed seasons and gear restrictions (FCL 2000). Draft amendments in Florida addressing vessel limits, sale of Speckled Trout for 30 days after the closure of the commercial fishery, and allowing a commercial bycatch of Speckled Trout have recently been passed based on the recent population assessment (FWC 2011).

In Louisiana, Speckled Trout can only be caught by rod and reel and Commercial fisherman must possess a license (LDWF 2011). There is a minimum length of 14 inches and annual quota of one million pounds (LDWF 2011). Speckled Trout cannot be taken from waters west of the Mermentau River (LDWF 2011) and no commercial fishing is allowed over the weekend (LDWF 2011).

In Texas, management measures include annual stock enhancement programs for four Texas bays (Anderson and Karel 2010) and gear restrictions (TPW 2011). In Alabama, Speckled Trout cannot be commercially caught (Blanchet et al. 2001). In Mississippi, fishing licenses, a size limit, gear restrictions, closed areas and quotas are used to manage Speckled Trout (Blanchet et al. 2001).

We have assigned a medium score to account for management throughout Speckled Trout’s range in the Gulf of Mexico while recognizing that the populations in Florida’s
Gulf are above management goals and the population levels in other states have not been assessed.

3.00 Substantial management measures are in place over a large portion of the species range and have demonstrated success in achieving conservation and sustainability goals.

Points of Adjustment (multiple selections allowed)

-0.25 There is inadequate scientific monitoring of stock status, catch or fishing effort.

There is a lack of adequate scientific monitoring throughout much of its range in the Gulf of Mexico, which means that abundance of Speckled Trout is unknown in some areas

-0.25 Management does not explicitly address fishery effects on habitat, food webs, and ecosystems.

Management does not explicitly address fishery effects on habitat and ecosystem.

-0.25 This species is overfished and no recovery plan or an ineffective recovery plan is in place.

-0.25 Management has failed to reduce excess capacity in this fishery or implements subsidies that result in excess capacity in this fishery.

+0.25 There is adequate scientific monitoring, analysis and interpretation of stock status, catch and fishing effort.

+0.25 Management explicitly and effectively addresses fishery effects on habitat, food webs, and ecosystems.

+0.25 This species is overfished and there is a recovery plan (including benchmarks, timetables and methods to evaluate success) in place that is showing signs of success OR recovery plan is not needed.

Speckled Trout populations in western Florida (i.e. Gulf of Mexico) are near or slightly above management goals. Abundance in other areas within the Gulf of Mexico is unknown, however, so no points are added.

+0.25 Management has taken action to control excess capacity or reduce subsidies that result in excess capacity OR no measures are necessary because fishery is not overcapitalized.

1.50 Points for Management
BYCATCH

Core Points (only one selection allowed)

Select the option that most accurately describes the current level of bycatch and the consequences that result from fishing this species. The term, "bycatch" used in this document excludes incidental catch of a species for which an adequate management framework exists. The terms, "endangered, threatened, or protected," used in this document refer to species status that is determined by national legislation such as the U.S. Endangered Species Act, the U.S. Marine Mammal Protection Act (or another nation's equivalent), the IUCN Red List, or a credible scientific body such as the American Fisheries Society.

1.00 Bycatch in this fishery is high (>100% of targeted landings), OR regularly includes a "threatened, endangered or protected species."

2.00 Bycatch in this fishery is moderate (10-99% of targeted landings) AND does not regularly include "threatened, endangered or protected species" OR level of bycatch is unknown.

3.00 Bycatch in this fishery is low (<10% of targeted landings) and does not regularly include "threatened, endangered or protected species."

Overall there is a lack of information about the level of bycatch in Speckled Trout fisheries. However, most Speckled Trout are caught using hook and line fishing gear, which typically has low bycatch levels (Morgan and Chuenpagdee 2003).

Points of Adjustment (multiple selections allowed)

-0.25 Bycatch in this fishery is a contributing factor to the decline of "threatened, endangered, or protected species" and no effective measures are being taken to reduce it.

-0.25 Bycatch of targeted or non-targeted species (e.g., undersize individuals) in this fishery is high and no measures are being taken to reduce it.

-0.25 Bycatch of this species (e.g., undersize individuals) in other fisheries is high OR bycatch of this species in other fisheries inhibits its recovery, and no measures are being taken to reduce it.

-0.25 The continued removal of the bycatch species contributes to its decline.
Measures taken over a major portion of the species range have been shown to reduce bycatch of "threatened, endangered, or protected species" or bycatch rates are no longer deemed to affect the abundance of the "protected" bycatch species OR no measures needed because fishery is highly selective (e.g., harpoon; spear).

Measures are probably not needed because this fishery is highly selective and does not regularly capture threatened, endangered or protected species.

There is bycatch of targeted (e.g., undersize individuals) or non-targeted species in this fishery and measures (e.g., gear modifications) have been implemented that have been shown to reduce bycatch over a large portion of the species range OR no measures are needed because fishery is highly selective (e.g., harpoon; spear).

Bycatch of this species in other fisheries is low OR bycatch of this species in other fisheries inhibits its recovery, but effective measures are being taken to reduce it over a large portion of the range.

Speckled Trout are caught as bycatch in fisheries for crustaceans and finfish (ASMFC 2011), but catch rates appear to be fairly low. For example, Speckled Trout have been found as bycatch in the Texas shrimp trawl fishery (Blanchet et al. 2001) and catch rates in the Tampa Bay roller frame trawl fishery have been estimated at 0.33 fish/net minute to 0.78 fish/net minute depending on the season (Meyer et al. 1991). A study conducted on otter trawlers in Florida’s Gulf coast determined only 0.092% of the catch was made up of Speckled Trout (Coleman et al. 1992). Speckled Trout are also caught as bycatch (3rd most common) on trotlines (a type of longline) targeting black drum in Texas (McEachron et al. 1987).

The continued removal of the bycatch species in the targeted fishery has had or will likely have little or no impact on populations of the bycatch species OR there are no significant bycatch concerns because the fishery is highly selective (e.g., harpoon; spear).

3.50 Points for Bycatch
REFERENCES


Darnell, R. 1958. Food habits of fishes and large invertebrates of Lake Ponchartrain, Louisiana, an estuarine community. Publications of the Institute of Marine Science the University of Texas 5:353-416.


Florida Court Law (FCL). 2000. 68B-37.003 size limits. Article IV, Section 9, Florida Court Law Implemented Article IV, Section 9, Florida Court History 11-1-89, amended 7-1-00.


Johnson, D.R. 1982. Effects of rainfall, recruitment, and operation of the Cedar Bayou Electric Generating Station (Baytown, Texas) on the dynamics of fish and macrocrustacean communities in the brackish water intake and discharge area. Ph.D. dissertation, Texas A&M University, College Station, TX.


