**NOTICE OF REGULAR MEETING**
**CITY OF SOUTH PADRE ISLAND**
**CONVENTION AND VISITORS ADVISORY BOARD**

NOTICE IS HEREBY GIVEN THAT THE CONVENTION AND VISITORS ADVISORY BOARD OF THE CITY OF SOUTH PADRE ISLAND, TEXAS WILL HOLD A REGULAR MEETING ON:

**Wednesday, September 28, 2016**
9:00 A.M. AT THE MUNICIPAL BUILDING,
CITY COUNCIL CHAMBERS, 2$^{ND}$ FLOOR
4601 PADRE BOULEVARD, SOUTH PADRE ISLAND, TEXAS

1) Call to order.

2) Pledge of Allegiance.

3) Public announcements and comments: *This is an opportunity for citizens to speak to the Convention and Visitors Advisory Board relating to agenda or non-agenda items.* ***Speakers are required to address the Convention and Visitors Advisory Board at the podium and give their name before addressing their concerns.*** *(Note: State law will not permit the Advisory Board to discuss, debate or consider items that are not on the agenda. Citizen comments may be referred to Convention and Visitors Bureau staff or may be placed on the agenda of a future Convention and Visitors Bureau Advisory Board meeting).*

4) Consent Agenda:

    a. Approval of minutes August 24, 2016 Regular Meeting.

5) Presentation of Post Report from Special Events: (Arnold)

    a. LKT Fishing Tournament

6) Presentation regarding the Brownsville South Padre Island International Airport. (MJones)

7) Presentation and possible discussion regarding funding the Friends of RGV Reef Project. (Arnold)

8) Presentation and possible discussion concerning the CVB Director's Summary Report. (Arnold)

    a. Departmental Updates
        *Administrative Updates
        *Group Sales Updates
        * Financial Updates
        *Communication Updates
        *TAG Report

9) Set new meeting date for October 2016.

10) Adjourn.

DATED THIS THE 23rd DAY OF SEPTEMBER 2016.

Rosa Zapata

Rosa Zapata, CVB Executive Services Specialist

CITY OF SOUTH PADRE ISLAND

I, THE UNDERSIGNED AUTHORITY, DO HEREBY CERTIFY THAT THE NOTICE OF MEETING OF THE GOVERNING BODY OF THE CITY OF SOUTH PADRE ISLAND, TEXAS IS A TRUE AND CORRECT COPY OF SAID NOTICE AND THAT

I POSTED A TRUE AND CORRECT COPY OF SAID NOTICE ON THE BULLETIN BOARD AT THE CITY HALL/MUNICIPAL BUILDING ON **September 23, 2016**, at/or before **5:00 P.M.** AND REMAINED SO POSTED CONTINUOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF SAID MEETING.

Rosa Zapata

Rosa Zapata, CVB Executive Services Specialist

THERE MAY BE ONE OR MORE MEMBERS OF THE SOUTH PADRE ISLAND CITY COUNCIL ATTENDING THIS MEETING, AND IF SO, THIS STATEMENT SATISFIES THE REQUIREMENTS OF THE OPEN MEETINGS ACT.

**Item No. 4**

**CITY OF SOUTH PADRE ISLAND**
**ADVISORY BOARD**
**CONSENT AGENDA**

**MEETING DATE:** September 28, 2016

**ITEM DESCRIPTION**

NOTE: All matters listed under Consent Agenda are considered routine by the Advisory Board of the City of South Padre Island and will be enacted by one motion. There will not be separate discussion of these items. If discussion is desired, that item will be removed from the Consent Agenda and considered separately.

Items to be considered are:

a. Approval of minutes August 24, 2016 Regular Meeting.

**RECOMMENDATIONS/COMMENTS**

Approve Consent Agenda

MINUTES
CITY OF SOUTH PADRE ISLAND
CONVENTION AND VISITORS ADVISORY
REGULAR MEETING

**WEDNESDAY, AUGUST 24, 2016**

## I. CALL TO ORDER.

The Convention and Visitors Advisory Board of the City of South Padre Island, Texas held a Regular Meeting on Wednesday, August 24, 2016 at the Municipal Complex Building, 2nd Floor, 4601 Padre Boulevard, South Padre Island, Texas. Chairman Wally Jones called the meeting to order at 9:00 a.m. A full quorum was present: Vice-Chairman Joe Ricco, Bill Donahue, Jimmy Hawkinson, Will Greenwood, Arnie Creinin, Bill Donahue and Sean Till. Also present Ex-Officio Michael Jones, Jose Mullet and Robert Salinas.

City staff members present were CVB Director Keith Arnold, CVB Accountant Lori Moore, Business Development Director Michael Flores.

## II. PLEDGE OF ALLEGIANCE.

Chairman Wally Jones led the Pledge of Allegiance.

## III. PUBLIC ANNOUNCEMENTS AND COMMENTS:

Public comments were given at this time.

## IV. CONSENT AGENDA:

Chairman Jones made the motion, seconded by Board Member Creinin to approve the Consent Agenda. Motion carried on a unanimous vote.

a. Approval of minutes July 21, 2016 Regular Meeting.

## V. PRESENTATION OF POST REPORT FROM SPECIAL EVENTS:

Ms. Betty Wells, Port Isabel Chamber of Commerce President, gave the Board a presentation concerning the post report mentioned below.

a. 2016 Summer Longest Causeway Run & Fitness Walk

## VI. DISCUSSION AND ACTION REGARDING APPLICATION FOR FUNDING REQUESTS ON NEW OR RETURNING SPECIAL EVENTS:

Chairman Jones made the motion, seconded by Board Member Creinin to approve the funding request of $2,000. Motion carried on a unanimous vote.

a. Winter Outdoor Wildlife Expo (WOWE)

## VII. PRESENTATION AND POSSIBLE DISCUSSION CONCERNING THE CVB DIRECTOR'S SUMMARY REPORT.

Presentation was given by CVB Director Keith Arnold.

a. Departmental Updates

*Administrative Updates
*Group Sales Updates
* Financial Updates
*Communication Updates

**VIII. PRESENTATION AND POSSIBLE DISCUSSION CONCERNING THE ATKINS GROUP REPORT.**

Presentation was given by Steve Atkins and Ryan Hundall.

a. FY17 Media and Marketing Plan
b. July 2016 Marketing Report

**IX. DISCUSSION AND ACTION CONCERNING RENEWAL OF THE ATKINS GROUP 2016-17 CONTRACT.**

Chairman Jones made the motion, seconded by Board Member Donahue to approve the renewal. Motion carried on a 6 to 1 vote with Board Member Till casting a nay vote.

**X. SET NEW MEETING DATE FOR SEPTEMBER 2016.**

New meeting date was set for September 28, 2016.

**XI. ADJOURN.**

There being no further business, Chairman Jones adjourned the meeting at 11:27 a.m.

____________________________________
Rosa Zapata, CVB Executive Services Specialist

______________________________
Wally Jones, CVA Chairman

**Item No. 5**

**CITY OF SOUTH PADRE ISLAND**
**ADVISORY BOARD MEETING**
**AGENDA REQUEST FORM**

**MEETING DATE:** September 28, 2016

**NAME & TITLE:** Keith Arnold, CVB Director

**DEPARTMENT:** South Padre Island Convention & Visitors Bureau

**ITEM**

Presentation of post report from special events:

a. LKT Fishing Tournament

**ITEM BACKGROUND**

**BUDGET/FINANCIAL SUMMARY**

**COMPREHENSIVE PLAN GOAL**

**LEGAL REVIEW**

Sent to Legal: YES: ____________ NO: ____________

Approved by Legal: YES: ____________ NO: ____________

Comments:

**RECOMMENDATIONS/COMMENTS**

POST EVENT REPORT FORM HOTEL OCCUPANCY
TAX FUNDING

Post Event Report Form

Date: September 20, 2016

*Organization Information*

Name of Organization: South Padre Island Chamber of Commerce – 2016 Ladies Kingfish Tournament

Address: 610 Padre Blvd., South Padre Island, Texas 78578

Contact Name: Roxanne Harris

Contact Phone Number: 956-761-4412

*Event Information*

Name of Event or Project: $35^{th}$ Annual Ladies Kingfish Tournament

Date of Event or Project: August 12, 13,14, 2016

Primary Location of Event or Project: South Padre Island Convention Centre, South Point Marina, Laguna Madre Bay and Gulf of Mexico.

Amount Requested: $ 2000.00

Amount Received: $2000.00

How were the tax funds used:(attach list of hotel tax funded expenses and receipts showing payment). To purchase various advertising placement. Our Quickbooks report is attached. Expenditures totaled $2071.90

How many years have you held this Event or Program: 35 years

***Event Funding Information***

1. Actual percentage of funded event costs covered by hotel occupancy tax: 100% of promotional budget was funded by the CVB. $2071.00. We also wish to thank the CVB for placing our event logo is several of their fishing related ad placements.

2. Actual percentage of facility costs covered by hotel occupancy tax (if applicable): Use of the Convention Centre Facility was provided as an in-kind donation. This donation makes it possible to carryout this event in an efficient manner and in comfortable functional setting.

3. Actual percentage of staff costs covered by hotel occupancy tax (if applicable): None

4. If staff costs were covered, estimate of actual hours staff spent on funded event: N/A

5. Did the event charge admission? Was there a net profit from the event? If there was a net profit, what was the amount and how is it being used? There is a registration fee to participate in our event, $85.00/$95.00 per angler, $20.00/$25.00 per captain. The event is planned to make a net profit . The net profit provides income to to sustain this event and other Chamber activities.

6. Please attach an actual Event Budget showing all revenues including sponsorships and all expenses. The current financial report is attached.

***Event Attendance Information***

1. How many people did you predict would attend this event? (number submitted in application for hotel occupancy tax funds): Friday 450, Saturday 510, Sunday 230.

2. What would you estimate as the actual attendance at the event?: Angler registration was down by 60.

3. How many room nights did you estimate in your application would be generated by attendees of this event or program? Estimate 45% of total registered anglers and families.

4. How many room nights do you estimate were actually generated by attendees of this event? 150 +/- estimate using the zipcode data complied through survey and delivered to the CVB staff.

5. If this Event has been funded by hotel occupancy tax in the last three years, how many room nights were generated at South Padre Island hotels by attendees of this Event? Only our promotional budget of $2000 was funded. By surveying our participants we try to estimate room nights which are reference in item #4 above.

   This Year
   Last Year
   Two Years Ago
   Three Years Ago

6. What method did you use to determine the number of people who booked rooms at South Padre Island hotels {e.g.; room block usage information, survey of hoteliers, total attendance formula, zipcode information,etc.)? We survey participants on each registration form. We compile zipcode information and provide that to the CVB staff each year.

7. Was a room block established for this Event at an area hotel (hotels),and if so, did the room block fill? No. If the room block did not fill, how many rooms were picked up? N/A

***Event Promotion Information***

1. Please check all efforts your organization actually used to promote this Event and how much was actually spent in each category:

Newspaper: Coastal Current $250, PI Parade $440. Leverage with matching in-kind ad placement.

Radio: None

TV: Sponsor trade with KVEO $1500, 15 second ad over 30 days leading up to the event. as able, no guaranteed numbers but promised to do more not less!

Other Paid Advertising: Lonestar Outdoors – homepage website June and July. $500
Saltwater Fishing Magazine 1 ad, July issue $632
SPI Guides Association – homepage website, 1 yr., $250

Number of Press Releases to Media- Multiple weekly beginning in May through the completion of the event.

Number Direct Mailings to out-of-town - Estimated 1200 anglers, 50 plus marinas and fishing stores.

Other Promotions – Weekly email blasts from the Chamber office using Constant Contact to our list of over 1200 addresses. Facebook posts to followers, with many subsequent shares. Mailing of posters to an extensive list of marinas and fishing shops in Texas. Poster distribution locally. Handouts at other area fishing events. Trade with Digital Media for ad placement on kiosks starting in June through the event. Street banner placement three weeks in advance of our tournament.

2. Did you include a link to the CVB or other source on your promotional handouts and in your website for booking hotel nights during this event? Yes. Utilized the CVB logo with link for all website placements. We also utilize our own website for promoting local lodging.

3. Did you negotiate a special rate or hotel/event package to attract overnight stays? We did not use room blocks. Since most hotels, motels, condos and property management companies are Chamber Members, choosing one for a room block is very difficult. We always recommend participants look at either our website or the CVB website to seek lodging options.

4. What new marketing initiatives did you utilize to promote hotel and convention activity for this Event? We included the CVB logo and website in all of our promotional pieces, website, and Facebook. Our street banner included the CVB. With only $2000 to spend it is difficult to "go big". The newest initiative is our event being included in other CVB ads placement promoting fishing for the Island. We appreciate being part of it and were thrilled to see our logo on the back cover of the TIFT magazine as part of the CVB ad.

5. Please attach samples of documents showing how South Padre Island was recognized in your advertising/promotional campaign.

6. Please attach at least one sample of all forms of advertising/promoting used in your campaign. If the sample itself does not indicate the medium (radio, TV, print, or mail) used or where the advertising took place (e.g. a city's newspaper, or a radio spot that does not indicate the city where the spot was played),please include other information that would show location of the advertising and medium utilized.

7. Please note any other success indicators of your event: This year (2016) was the first time in the past 16 years that registration for our event reflected a significant down turn in participants. We were down by 60. We attribute this to the adverse marine weather forecast for offshore which caused a decline in the number of offshore entries. We also believe that the earlier school start date had a significant impact on our attendance.

***Sporting Related Events***

1. If the Event funded by hotel occupancy tax was a sporting-related function/facility, how many individuals actually participated in this event? 240 anglers, 99 boats (captains), estimated additional crew 50, plus families. 103 anglers weighed in on 62 boats weighed.

2. If the event was a sporting-related function/facility, how many of the participants were from another city or county? Estimated 212 individuals and families based on zipcode survey.

3. If the event was a sporting-related function/facility, quantify how the activity substantially increased economic activity at hotel within the city or its vicinity? Since we did not book a room block I am not sure how to arrive at this number.

***Additional Event Information***

What South Padre Island businesses did you utilize for food,supplies, materials,printing,etc? Schlitterbahn ShrimpHaus; Toucan Graphics, SPI Convention Centre, Fort Knox Protection, Cameron County Insurance, Rental World, A Clean Portoco, Postmaster, Captain Roys, Sutherlands, Mini Stor All, Coastal Current, PI Parade, Walmart, Quik Stop, Sysco.

Wrap-up Press release:

The South Padre Island Chamber of Commerce welcomed anglers, captains and their families to the 35th Annual Ladies Kingfish Tournament beginning on Friday night for registration. Early Saturday morning, 240 anglers and 99 boats hit the waterways, returning to the docks before 7:00 p.m. to weigh in their catch. This year's tournament brought 176 bay anglers and 64 offshore to the Island for a fun filled three days. While there were concerns early in the week regarding high seas, the offshore ladies showed everyone how it was done. 16 of the 22 offshore boats weighed in fish, and some pretty awesome fish at that.

The Awards Ceremony on Sunday brought anglers and their families together to recognize those who took top prizes. 30 anglers received framed original artwork by Dinah Bowman specific to the species they won. Trophies done by Bowman were also awarded for Grand Champion Bay Division and Grand Champion Offshore Division.

This year's bay champion was Teri Vela from Port Isabel, TX. Teri brought in all three species for a total weight of 12.9. She was fishing with Capt. Gilbert Vela on the boat Gilbert's Gals. Shanna Collins from Kingsville, TX walked away with the Offshore Championship when she brought in all four species for a total weight of 39.45. Kelsey was fishing on the boat Heartache with Justin Drummond. Congratulations to these anglers and all the winners of this year's tournament.

Mark your calendar for the 36th Annual Ladies Kingfish Tournament scheduled for August 11-13, 2017, and start your own Island tradition.

**Please Submit no later than (insert deadline) to:**

Event Funding
Item #6

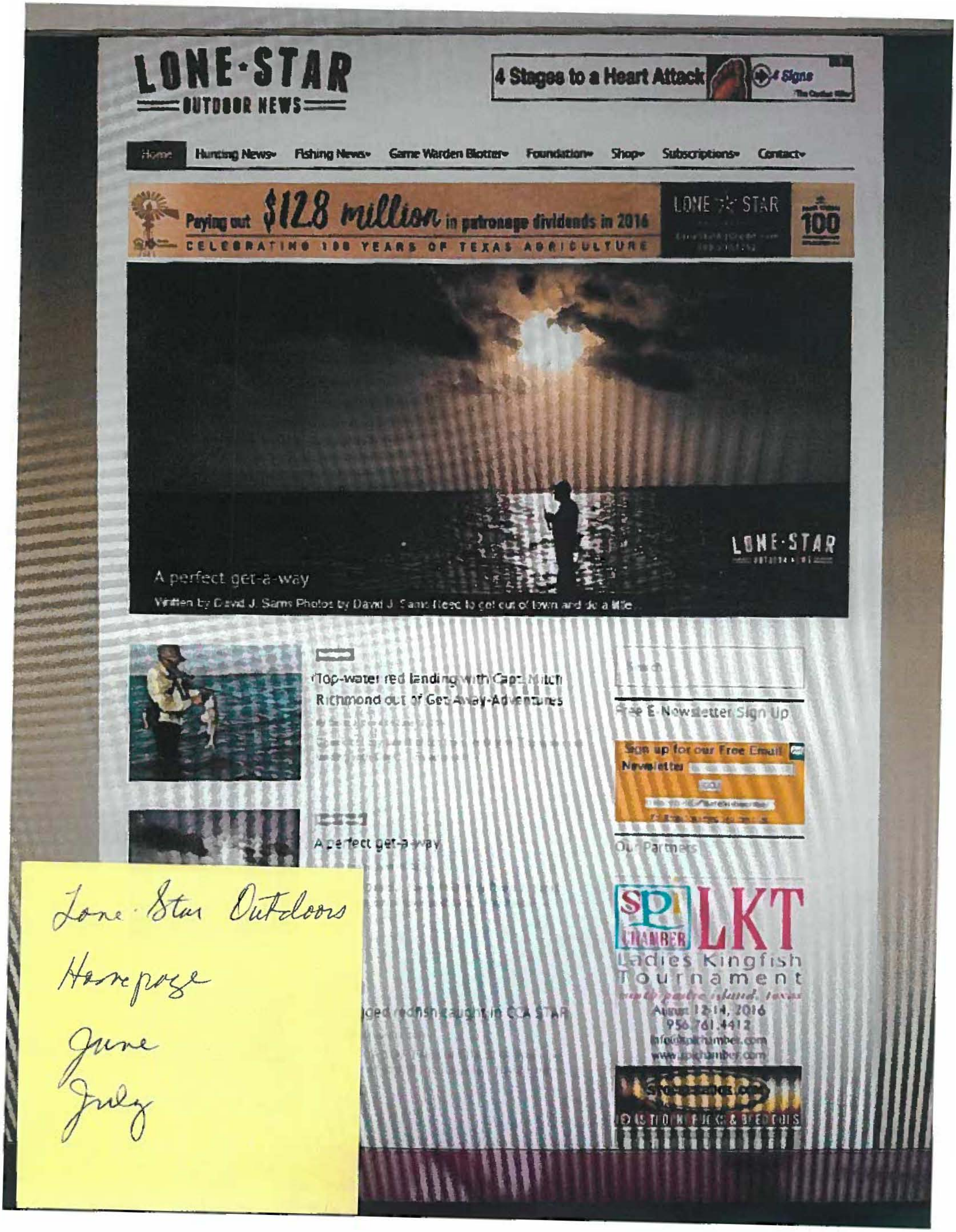
# South Padre Island Chamber of Commerce
## Ladies Kingfish Tournament 2016
### Income Statement (NOT FINAL)

| | Oct '15 - Sep 16 | Budget | $ Over Budget | % of Bud... |
|---|---|---|---|---|
| **Ordinary Income/Expense** | | | | |
| **Income** | | | | |
| **450000 · Ladies Kingfish Tournament -** | | | | |
| **411050 · Reg. Fees** | 22,920.00 | 27,000.00 | -4,080.00 | 84.9% |
| **412050 · Sponsorship** | 28,270.00 | 25,000.00 | 3,270.00 | 113.1% |
| **413050 · Event promo items** | 2,330.00 | 3,000.00 | -670.00 | 77.7% |
| **429050 · Miscellaneous** | 2,900.00 | 5,000.00 | -2,100.00 | 58.0% |
| **Total 450000 · Ladies Kingfish Tournament -** | 56,420.00 | 60,000.00 | -3,580.00 | 94.0% |
| **Total Income** | 56,420.00 | 60,000.00 | -3,580.00 | 94.0% |
| **Gross Profit** | 56,420.00 | 60,000.00 | -3,580.00 | 94.0% |
| **Expense** | | | | |
| **620000 · Ladies Kingfish Tournament** | | | | |
| **500050 · Promotion - LKT** | 2,071.90 | 2,500.00 | -428.10 | 82.9% |
| **502050 · Awards/Prizes/Tropies - LKT** | 5,669.75 | 5,850.00 | -180.25 | 96.9% |
| **522050 · Food/Drink - LKT** | 4,254.14 | 5,000.00 | -745.86 | 85.1% |
| **562050 · Misc. - LKT** | 6,261.22 | 5,000.00 | 1,261.22 | 125.2% |
| **576050 · Printing - LKT** | 0.00 | 500.00 | -500.00 | 0.0% |
| **606050 · Supplies - LKT** | 97.96 | 450.00 | -352.04 | 21.8% |
| **618050 · T-Shirts/logo items - LKT** | 4,095.12 | 3,500.00 | 595.12 | 117.0% |
| **619050 · Event Bags - LKT** | 2,275.00 | 2,500.00 | -225.00 | 91.0% |
| **Total 620000 · Ladies Kingfish Tournament** | 24,725.09 | 25,300.00 | -574.91 | 97.7% |
| **Total Expense** | 24,725.09 | 25,300.00 | -574.91 | 97.7% |
| **Net Ordinary Income** | 31,694.91 | 34,700.00 | -3,005.09 | 91.3% |
| **Net Income** | **31,694.91** | **34,700.00** | **-3,005.09** | **91.3%** |

Event Attendance Information
Item #6

**2016 Ladies Kingfish Tournament Survey Results By Zip Code**

| Zip Code | # of Forms 2015 | 2016 |
|---|---|---|
| 791... | 1 | 1 |
| 797..... | 1 | 1 |
| 770... | 1 | 2 |
| 778.. | 1 | 2 |
| 775.. | 1 | 3 |
| 774.. | 5 | 6 |
| 772.. | 1 | 1 |
| 750.. | 1 | 1 |
| 752.. | 2 | 4 |
| 78413 | 1 | 1 |
| 78336 | 1 | 1 |
| 78583 | 1 | 1 |
| 78023 | 6 | 4 |
| 78258 | 1 | 1 |
| 78070 | 1 | 1 |
| 78076 | | 1 |
| 78130 | 3 | 1 |
| 78209 | 1 | 1 |
| 78516 | 1 | 2 |
| 78229 | | 1 |
| 78249 | 1 | 1 |
| 78232 | 7 | 8 |
| 78411 | 2 | 1 |
| 78404 | 1 | 1 |
| 78427 | 1 | 1 |
| 78363 | 1 | 3 |
| 78598 | 8 | 6 |
| 78596 | 12 | 9 |
| 78586 | 4 | 5 |
| 78539 | 5 | 2 |
| 78583 | 3 | 2 |
| 78589 | 3 | 1 |
| 78592 | 2 | 1 |
| 78566 | 5 | 7 |
| 78570 | 4 | 2 |
| 78572 | 7 | 10 |
| 78573 | 4 | 3 |
| 78577 | 3 | 1 |
| 78575 | 1 | 2 |
| 78574 | 1 | 5 |
| 78577 | 1 | 3 |
| 78563 | 1 | 2 |
| 78552 | 20 | 10 |
| 78553 | 1 | 2 |
| 78550 | 27 | 15 |
| 78542 | 1 | 2 |
| 78540 | 1 | 2 |
| 78541 | 2 | 2 |
| 78539 | 5 | 2 |
| 78754 | 1 | 2 |
| 78599 | 3 | 1 |
| 78526 | 10 | 12 |
| 78852 | 1 | 1 |
| 78521 | 7 | 6 |
| 78520 | 13 | 6 |
| 78727 | 1 | 1 |
| 78749 | | 1 |
| 78620 | 2 | 1 |
| 78504 | 25 | 23 |
| 78840 | 1 | 1 |
| 78613 | 1 | 1 |
| 78758 | | 1 |
| 78861 | 1 | 1 |
| 78501 | 1 | 5 |
| 57702 | | 1 |
| 78666 | 1 | 1 |
| 78578 / 78597 | 110 | 73 |
| Unknown | | |
| Total | 342 | 285 |




Lone Star Outdoors
Homepage
June
July


TEXAS SALTWATER
FISHING
MAGAZINE
Travel Rods
MAKE SENSE FOR FLYING ANGLERS
Joe Doggett – Page 36
CCA & TPWD
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for Huge POC Reef
John Blaha – Page 62
SUMMERTIME KINGS
HEAT UP THE COAST
Joe Richard – Page 30
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TSFMAG.COM
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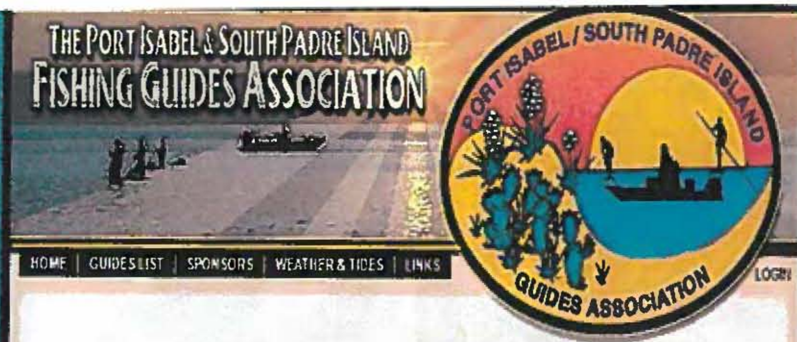
Texas Saltwater
Fishing Magazine

July issue

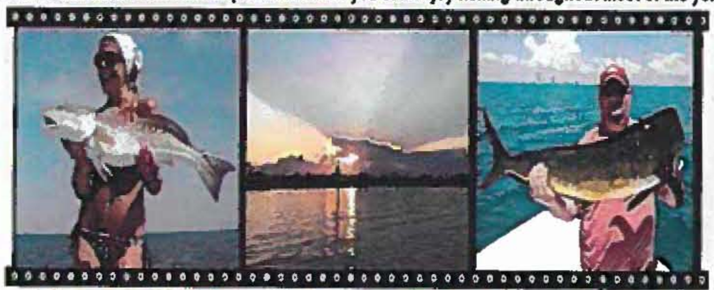



**PORT ISABEL & SOUTH PADRE ISLAND**

## FISHING GUIDES ASSOCIATION

maintains a listing of members that offer bay and offshore fishing charters.

**South Padre Island has a sub-tropical climate so you can enjoy fishing throughout most of the year.**



**FISHING THE SOUTH TEXAS COAST**

spi CHAMBER LKT

Ladies Kingfish Tournament

*south padre island, texas*

**The 35th Annual South Padre Island Chamber of Commerce Ladies Kingfish Tournament will be held on August 12 - 14, 2016**

**Bay fishing** guides specialize in shallow water drifting and sight casting for reds on the flats of the Laguna Madre and South Bay. They are also good at finding and catching trout, flounder, snook and some big offshore fish that come into the channels and jetties.

**Offshore fishing** offers several species accessible within a few miles, including mahi mahi, grouper, spanish mackerel, tuna, kingfish, amberjack, cobia, dolphin, shark, barracuda, tarpon, and snapper.

**Deep sea fishing** for big billfish like marlin, sailfish and swordfish you have to go to the

SPI / PI
Guides Assoc
Home page

Parade 6/16# ~~6/30~~ 7/14 (1pd/1free)

spi CHAMBER LKT
Ladies Kingfish Tournament
*south padre island, texas*

August 12-14, 2016

Follow us at:
Facebook.com/
LadiesKingfishTournament

## *Schedule of Events*

***Friday, August 12, 2016 - SPI Convention Centre***

| | |
|---|---|
| Registration | 4:00 p.m. - 7:00 p.m. |
| Team Shirt Contest | 6:30 p.m. |

***Saturday, August 13, 2016 - SouthPoint Marina***

| | |
|---|---|
| Start Time | 6:30 a.m. |
| Weigh-In (Bay Division) | 1:00 p.m. - 3:30 p.m. |
| Weigh-In (Offshore Division) | 4:00 p.m. - 7:00 p.m. |

***Sunday, August 14, 2016 - SPI Convention Centre***

| | |
|---|---|
| Awards Ceremony/Lunch | 11:00 a.m. |

## 2016 Title Sponsors

La Quinta Inn & Suites · La Copa Inn · Hilton Garden Inn South Padre Island · Frubi Motors · The Sportsman · Shallow Sport · South Padre Island

*For more information, registration forms and rules:*
*www.spichamber.com - info@spichamber.com*
*or call 956.761.4412*

PARADE B/W #12 6/30 [illegible]

SPI CHAMBER

# LKT

## Ladies Kingfish Tournament

*south padre island, texas*

## August 12 - 14, 2016

***Join us on the dock Saturday August 13th to see who brings in the big fish! We have covered seating, beverage and food vendors, and lots of fun!***

## *Schedule of Events*

***Friday, August 12, 2016 - SPI Convention Centre***

| | |
|---|---|
| Registration | 4:00 p.m. - 7:00 p.m. |
| Team Shirt Contest | 6:30 p.m. |

***Saturday, August 13, 2016 - SouthPoint Marina Port Isabel***

| | |
|---|---|
| Start Time | 6:30 a.m. |
| Weigh-In (Bay Division) | 1:00 p.m. - 3:30 p.m. |
| Weigh-In (Offshore Division) | 4:00 p.m. - 7:00 p.m. |

***Sunday, August 14, 2016 - SPI Convention Centre***

| | |
|---|---|
| Awards Ceremony/Lunch | 11:00 a.m. |

*For more information, registration forms and rules:*
*www.spichamber.com - info@spichamber.com*
*or call 956.761.4412*

## 2016 Title Sponsors

LaQuinta Inn & Suites · La Copa Inn · Hilton Garden Inn South Padre Island · Fruia Motors (Cadillac Buick GMC) · The Sportsman Shallow Sport · South Padre Island

# 2016
## Title Sponsors

LaQuinta Inn & Suites South Padre Island
La Copa Inn South Padre Island
Hilton Garden Inn South Padre Island

Frula Motors
Cadillac Buick GMC

The Sportsman
Shallow Sport

South Padre Island

*Looking for something fun to do on*
*Saturday afternoon?*
*Join us on the dock and see who brings in the biggest fish!*

*Saturday, August 14th at SouthPoint Marina in Port Isabel*
Bay Division Weigh-In - 1:00 p.m. - 3:30 p.m.
Offshore Division Weigh-In - 4:00 p.m. - 7:00 p.m.

SPI Chamber LKT Ladies Kingfish Tournament south padre island, texas

*Covered seating, and lots of excitement!*

Coastal Current
Color qtr pg
6/23/16
7/7/16
8/4/16

Chamber Website/Facebook


August 12-14, 2016
South Padre Island

35th Annual
Ladies Kingfish Tournament

**Join us on the dock at SouthPoint Marina in Port Isabel to see who brings in the biggest fish!**

**Saturday, August 13, 2016**

| | |
|---|---|
| Weigh-In (Bay) | 1:00 pm - 3:30 pm |
| Weigh-In (Offshore) | 4:00 pm - 7:00 pm |

2016 Title Sponsors:

La Quinta Inn & Suites South Padre Island · La Copa Inn South Padre Island · Hilton Garden Inn South Padre Island · FRUIA Cadillac · BUICK · GMC www.fruia.com · The Sportsman · Shallow Sport · South Padre Island

# Ladies Kingfish Tournament

spi CHAMBER LKT Ladies Kingfish Tournament *south padre island, texas*

spi CHAMBER LKT Ladies Kingfish Tournament *south padre island, texas*

## South Padre Island, TX

## August 12-14, 2016


Bay Division:
Trout, Flounder, Redfish

Offshore Division:
Kingfish, Blackfin Tuna
Bonita, Dorado

*Start your own family tradition!*

Download Registration Forms At:
www.spichamber.com

For More Information:
info@spichamber.com
956.761.4412

Follow us on Facebook:
Ladies Kingfish Tournament

## 2016 Title Sponsors:

LaQuinta Inn & Suites South Padre Island

La Copa Inn South Padre Island

FRUIA

The Sportsman

South Padre

LKT Ladies Kingfish Tournament south padre island, texas

35th Annual Ladies Kingfish Tournament
South Padre Island, TX
August 12-14, 2016

info@spichamber.com * www.spichamber.com

LKT Ladies Kingfish Tournament south padre island, texas

Digital Media Group
Website Banner Ad


# Thank You to our Generous Sponsors!

spi CHAMBER LKT
Ladies Kingfish Tournament
*south padre island, texas*

## AUGUST 12 - 14, 2016

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SPI CHAMBER LKT Ladies Kingfish Tournament *south padre island, texas*

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*.....Helen Keller*

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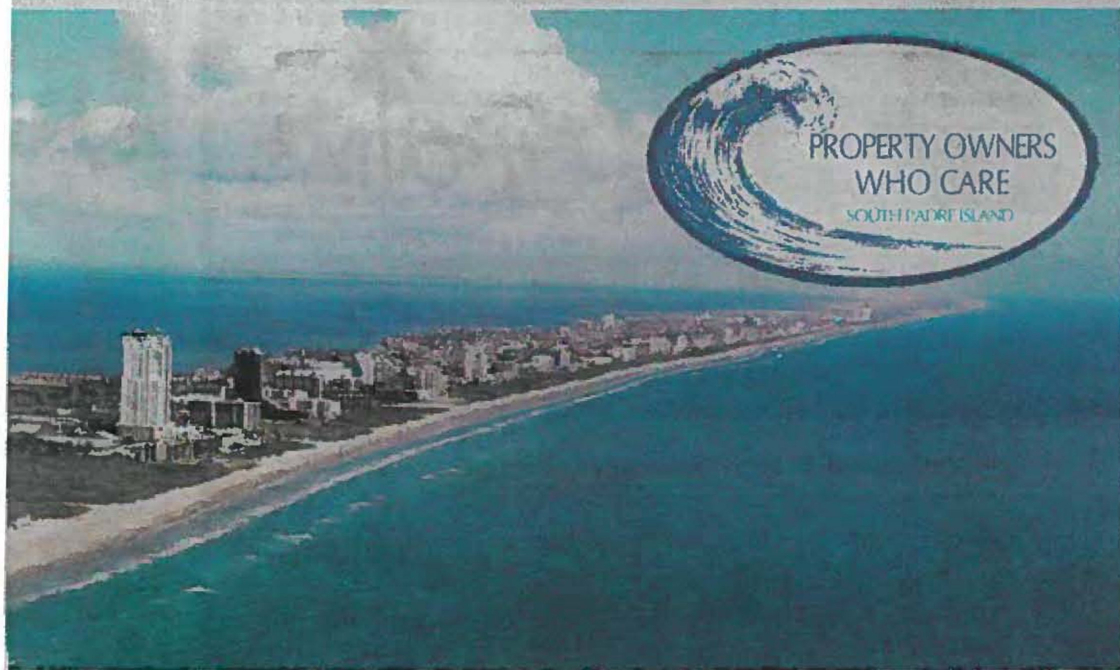
## Hundreds of anglers cast their lines at women's fishing tourney


[redacted] he 35th Annual South Padre




## Be a part of caring for our Island...
**PAGE 6**


## 35th Annual Ladies Kingfish Tournament
**PAGE 20**



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|---|---|
| Publisher | Lilia Castillo Jones |
| General Manager | Wendy Van Den Boogerd |
| Editor | Lisa Seiser |
| Advertising Sales | India Bowles & Russell Dean |
| Graphic Artists | Josh Garcia & Ben Cantu |
| Advertising deadline | Monday at 4 p.m. |

102 E. Swordfish, Ste E / P.O. Box 2429 • South Padre Island, Texas 78597
956-761-9341 • Fax: 956-761-1436
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# 35th Annual Ladies Kingfish Tournament

The South Padre Island Chamber of Commerce welcomed anglers, captains and their families to the 35th Annual Ladies Kingfish Tournament beginning on Friday night for registration. Early Saturday morning, 240 anglers and 99 boats hit the waterways, returning to the docks before 7:00 p.m. to weigh in their catch. This year's tournament brought 176 bay anglers and 64 offshore to the Island for a fun filled three days. While there were concerns early in the week regarding high seas, the offshore ladies showed everyone how it was done. 16 of the 22 offshore boats weighed in fish, and some pretty awesome fish at that.

The Awards Ceremony on Sunday brought anglers and their families together to recognize those who took top prizes. 30 anglers received framed original artwork by Dinah Bowman specific to the species they won. Trophies done by Bowman were also awarded for Grand Champion Bay Division and Grand Champion Offshore Division.

This year's bay champion was Teri Vela from Port Isabel, TX. Teri brought in all three species for a total weight of 12.9. She was fishing with Capt. Gilbert Vela on the boat Gilbert's Gals. Shanna Collins from Kingsville, TX walked away with the Offshore Championship when she brought in all four species for a total weight of 39.45. Kelsey was fishing on the boat Heartache with Justin Drummond. Congratulations to these anglers and all the winners of this year's tournament.

Sponsors for year's event were Title Sponsors Fruia Motors, LaCopa Inn & Suites/LaQuinta Inn & Suites/Hilton Garden Inn, Shallow Sport of Texas/ The Sportsman and South Padre Island Convention & Visitors Bureau; Gold Sponsors, Rental World, and Sea Ranch II at SouthPoint; Bronze Sponsors First National Bank-SPI, KVEO-TV News Channel 23, L&F Distributors, and Louie's Backyard, and Friend Sponsors Anglers Marine, Blackbeards', Blue Marlin Supermarket, Cameron County Insurance Center, Central Texas Concealed, Coastal Current Weekly, Digital Media Group, Leslie Blasing – Leslie Presents!, Nevill Document Solutions, Padre Island Brewing Co., Pirate's Landing Fishing Pier, Rio Grande LNG, Rio Grande Valley Premium Outlets, Salinas, Allen & Schmitt, LLP, Schlitterbahn Beach Resort, Sea Ranch Restaurant, South Padre Parade, The Stables, Tequila Sunset and Wild Rose Apparel. This year's Awards Lunch Sponsor was Furcron Realtors and Property Management, and the Team Shirt Contest Sponsor was Dee Dee's Boutique.

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Trophies were awarded
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**Item No. 6**

**CITY OF SOUTH PADRE ISLAND**
**ADVISORY BOARD MEETING**
**AGENDA REQUEST FORM**

**MEETING DATE:** September 28, 2016

**NAME & TITLE:** Michael Jones, CVA Ex-Officio Member

**DEPARTMENT:** South Padre Island Convention & Visitors Bureau

**ITEM**

Presentation regarding the Brownsville South Padre Island International Airport.

**ITEM BACKGROUND**

**BUDGET/FINANCIAL SUMMARY**

**COMPREHENSIVE PLAN GOAL**

**LEGAL REVIEW**

Sent to Legal: YES: ___________ NO: ___________

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**Item No. 7**

# CITY OF SOUTH PADRE ISLAND
# ADVISORY BOARD MEETING
# AGENDA REQUEST FORM

**MEETING DATE:** September 28, 2016

**NAME & TITLE:** Keith Arnold, CVB Director

**DEPARTMENT:** South Padre Island Convention & Visitors Bureau

**ITEM**

Presentation and possible discussion regarding funding the Friends of RGV Reef Project.

**ITEM BACKGROUND**

**BUDGET/FINANCIAL SUMMARY**

**COMPREHENSIVE PLAN GOAL**

**LEGAL REVIEW**

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**RECOMMENDATIONS/COMMENTS**

*Reviews in Fisheries Science*, 17(1):48-67, 2009

ISSN: 1064-1262 print
DOI: 10.1080/10641260802160717

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# A Life History Review for Red Snapper in the Gulf of Mexico with an Evaluation of the Importance of Offshore Petroleum Platforms and Other Artificial Reefs

BENNY J. GALLAWAY,[1] STEPHEN T. SZEDLMAYER,[2] and WILLIAM J. GAZEY[3]

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[2]Department of Fisheries and Allied Aquacultures, Auburn University, Alabama, USA
[3]Gazey Research, Victoria, British Columbia, Canada

*Red snapper mature as early as age 2, have high fecundity (a 10-year-old female produces 60 million eggs per year), and may live for over 50 years. Eggs, larvae, and post-settlement juveniles typically show high rates of natural mortality. For example, of the 60 million eggs produced annually by a 10-year-old female, only about 450 would survive to 5 cm, the size at which they enter the shrimp fishery. Changes in abundance by size and age appear to be consistent with density dependence in survival rate from ages 0 to 1 and likely ages 0 to 2. Red snapper are attracted to structure or reef habitat at all ages, but larger, older fish also occur over open habitat once they have reached a size that renders them largely invulnerable to predation. Artificial reefs comprise a small fraction of the overall high-relief reef habitat, but harbor a large fraction of the present-day age 2 red snapper populations. Prior to the proliferation of artificial reefs in the northern Gulf, age 2 red snapper may have historically occurred mainly over open-bottom, sand-mud benthic habitat where natural and shrimp trawl bycatch mortality was high. Age 2 fish dominate red snapper populations at artificial reefs, whereas the age composition of red snapper at natural reefs usually show older ages are dominant. The present day red snapper fishery is heavily dependent on catches at artificial reefs. Evidence is presented that suggests red snapper production in the northern Gulf likely has been increased by the establishment of significant numbers of artificial reefs.*

**Keywords** red snapper, *Lutjanus campechanus*, oil and gas platforms, density-dependent mortality, life history, artificial reefs

## *INTRODUCTION*

The red snapper *Lutjanus campechanus* is an unusual finfish. In the Gulf of Mexico (Gulf), red snapper mature at age 2 and can live for over 50 years (Szedlmayer and Shipp, 1994; Render, 1995; Wilson and Nieland, 2001). They are also characterized by high fecundity. A female age 0 red snapper recruit produces, on average, 55.5 million eggs over its lifespan (SEDAR7, 2005). This is more than an order of magnitude higher than any of the finfishes listed in the Ransom Myers' Stock Recruitment Database (2007).

Despite these attributes, the Gulf population of red snapper has been in an overfished condition since at least 1994 (Goodyear, 1994), and rebuilding efforts to date have been unsuccessful (SEDAR7, 2005). Generally, this failure is believed to have been attributable to the inability to reduce shrimp trawl bycatch while maintaining a high total allowable catch (TAC) in the directed fishery. However, shrimp trawl bycatch mortality of red snapper has plummeted since 2003, but there has not been any evidence that the abundance of age 1 juveniles

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A

has increased substantially. A possible explanation is that habitat limitation (or compensatory mortality) may be an important population control, particularly during the early life stages of red snapper.

ALABAMA

Shipp (1999) noted that the addition of large amounts of artificial reef habitat (over 20,000 individual reefs installed) in an area offshore of Alabama was coincident with the establishment of a significant red snapper fishery. This area had formerly been devoid of all but relatively diminutive soft-bottom fish species of little or no economic importance. He noted that the ichthyofauna of a quarter century prior had been transformed from an economically depauperate biomass to one supporting an industry valued at $60 million annually. He rhetorically asked if this change had resulted in a change in total biomass? His answer was: "We don't know, but did it matter in terms of management decisions?" (Shipp, 1999:54).

Cowan et al. (1999) responded that "yes, it mattered" because a fundamental change in habitat (the placement of artificial reefs) had occurred at the expense of the small benthic fisheries in a region of the shelf that had formerly provided a nursery function to many species of fishes. They argued that nursery function had been traded for adult habitat, complete with a rich set of predators, without any consideration of the ecosystem consequences of the tradeoffs. They suggested that large-scale deployment of artificial reefs could result in large-scale modification of ecosystem function, with effects good and bad depending on specifics of critical habitat requirements and recruitment bottlenecks.

Trawl samples of today (e.g., Wells, 2007) suggest that the addition of artificial reef habitat offshore Alabama has not resulted in an area-wide displacement or loss of the soft-bottom ichthyofauna as characterized by Shipp (1999). These species still occur and dominate trawl samples. However, an increase in adult reef species has occurred that has been coincident with artificial reef placement. As will be shown below, these new populations of large predators indeed forage on prey species inhabiting the surrounding soft bottoms, as well as on reef-associated and water column organisms. The magnitude of the overall effects of artificial reefs on productivity and ecosystem function remains unanswered. Also, the question of whether the placement of artificial reefs actually increases production or merely aggregates species such as red snapper remains contentious.

In this article, we review the literature describing the life history, distribution, and ecology of the red snapper in the Gulf of Mexico. Specifically, we examine the role and relative importance of offshore oil and gas platforms and other artificial reefs as factors affecting the Gulf of Mexico red snapper population. We begin by noting that red snapper is characterized as a reef fish, and their reef association begins almost immediately after they leave the planktonic stage and settle to the bottom (e.g., Szedlmayer and Howe, 1997; Szedlmayer and Conti, 1999; Workman et al., 2002). This association has been well documented for ages 0–8, but it may weaken considerably at older ages (e.g., Render, 1995; Nieland and Wilson, 2003; Szedlmayer, 2007). We also note that, on a spatial basis, reef habitat is a relatively scarce commodity in the northern Gulf where red snapper occur (Ludwick, 1964; Parker et al., 1983). In this context, we also examine the issue of habitat limitation (or compensatory mortality) and the life stages at which habitat limitation may be important.

## *LIFE HISTORY SYNTHESIS*

2"

For descriptive and management purposes, we first divide the life history of red snapper into pre-recruit (<50 mm total length, TL) and post-recruit (>50 mm TL) phases. The pre-recruit life stages include eggs, larvae, and post-settlement juveniles <50 mm TL. At 50 mm TL, they enter the Gulf penaeid shrimp trawl fishery as bycatch. The post-recruit life stages include early juveniles (ages 0 and 1), young adults (ages 2 to 7), and mature adults (ages 8+). Early juveniles are taken as bycatch in the shrimp fishery, whereas young and mature adults are taken in the directed fishery.

### *Pre-Recruit Life Stages*

#### *Eggs*

Spawning of red snapper in the northern Gulf of Mexico extends from April through September, with peak spawning occurring in June–August (Render, 1995; Bradley and Bryan, 1975; Futch and Burger, 1976; Collins et al., 1996). The eggs are pelagic, spherical, transparent, and about 0.8 mm in diameter (Rabalais et al., 1980). After spawning, the eggs are buoyant and float to the surface. In the laboratory, on the order of 50% of the eggs hatch within 20–27 hr after fertilization (Rabalais et al., 1980; Minton et al., 1983). Gallaway et al. (2007) estimated an egg stage duration of 1 day, with an instantaneous daily rate of natural mortality of $M = 0.4984$ (Table 1).

#### *Larvae*

1/8"

At hatching, the larvae are about 2.2 mm total length (TL), and they remain pelagic until metamorphosis and settlement, which occurs when they are 16–19 mm TL and between 26 and 30 days in age (Rabalais et al., 1980; Szedlmayer and Conti, 1999; Rooker et al., 2004). Gallaway et al. (2007) used a mean larval stage duration estimate of 27 days and an estimated instantaneous daily natural mortality rate for this stage of 0.3014. That estimate is revised herein to reflect a mean larval stage duration of 28 days and an instantaneous daily rate of natural mortality of 0.2413. The estimated total mortality for this stage is $M = 6.7564$ (Table 1).

Lyczkowski-Shultz et al. (2005) showed that larval abundance determined from the SEAMAP (Southeast Area Monitoring and Assessment Program, National Marine Fisheries Service, NMFS) neuston net sampling was directly correlated

**Table 1** Life history stages and natural mortality estimates for red snapper over the first two years of life

| Age | Stage | Duration | Dates | M | Total | Reference |
|---|---|---|---|---|---|---|
| 0* | Egg | 1 | 1 July–1 July | 0.4984 | 0.4984 | Gallaway et al. (2007)*** |
| | Larvae | 28 | 2 July–29 July | 0.2413 | 6.7564 | Gallaway et al. (2007) |
| | Juvenile 1 | 38 | 30 July–5 Sept | 0.1196 | 4.5448 | Rooker et al. (2004) |
| Totals | | *67 | | | 11.7996 | |
| 0** | Juvenile 2 | 117 | 6 Sept–30 Dec | 0.0054 | 0.6318 | Szedlmayer (2007) |
| 0/1** | Juvenile 3 | 181 | 1 Jan–31 June | 0.0054 | 0.9774 | Szedlmayer (2007) |
| Totals | | 298 | | | 1.6092 | |
| 1** | Juvenile 4 | 365 | 1 July–31 June | 0.0033 | 1.2 | Gazey et al. (submitted) |

*Pre-recruit.
**Recruit.
***$M_{egg}$ values of 13.3 in Gallaway et al. (2007) revised to 11.8 and larval- and juvenile 1-stage durations changed from the Gallaway et al. (2001) estimates of 27 and 39 days to 28 and 38 days, respectively. These changes reflect new data utilized in the methodology described in Gallaway et al. (2007).

with estimates of adult abundance ($r = 0.813$, $p = 0.004$, and $r^2 = 0.661$). Lyczkowski-Shultz and Hanisko (2007) reported occurrence and abundance patterns for red snapper larvae in the Gulf of Mexico. During summer (mid-June through July), the highest mean station abundance values were observed off central and western Louisiana at depths between 50 and 100 m. In addition, red snapper larvae were consistently taken off south Texas, Mississippi, and Alabama, but abundance was lower east of the Mississippi River as compared to areas to the west of the river.

Lyczkowski-Shultz and Hanisko (2007) also observed that abundance from 50- to beyond 100-m depths off central and south Texas in the fall was markedly higher than had been observed in this area during summer. Based upon data from the fall plankton survey, red snapper larvae are encountered much less frequently and in lower numbers in the eastern Gulf than in the western Gulf. Lyczkowski-Shultz and Hanisko (2007) noted that the consistent presence of red snapper larvae in samples taken between the 100- and 200-m depth contours in both the western and eastern Gulf supports the contention that red snapper spawn over a wide depth range, i.e., from mid-shelf to the continental slope.

### *Post-Settlement Juveniles*

3/4" to 2"

We define this stage as early juveniles 19–50 mm TL, 29–66 days in age (Szedlmayer and Conti, 1999; Rooker et al., 2004). Assuming eggs were deposited on July 1 as a start date, these fish would be present for a 38-day period between July 30 and September 5 (see Table 1). Based on Gallaway et al. (2007) and Rooker et al. (2004), the instantaneous daily mortality rate for this stage is estimated to be 0.1196 ($r^2 = 0.918$). The total mortality for this stage would thus be M = 4.5448 (0.1196 × 38 days).

As for most species, natural mortality is high for pre-recruit red snapper (Table 1). The duration of the three pre-recruit stages is 67 days and total M = 11.8. Assuming that a 10-year-old female red snapper produces 69.44 million eggs per year (SEDAR7, 2005), a total of 521 juveniles would survive to 50 mm TL and be susceptible to shrimp trawl bycatch.

Newly settled red snapper quickly move to structured habitat such as low-relief, relic-shell habitat (Workman and Foster, 1994; Szedlmayer and Howe, 1997; Szedlmayer and Conti, 1999; Rooker et al., 2004; Lingo and Szedlmayer, 2006; Piko and Szedlmayer, 2007). These fish grow rapidly in summer and fall and quickly outgrow their initial habitat. As they became larger, they seek larger, more structured habitat (Szedlmayer and Lee, 2004).

### *Post-Recruit Life Stages*

2"

These stages begin with age 0 red snapper greater than 50 mm TL, the size at which they enter the Gulf penaeid shrimp fishery as bycatch. They continue to be taken by this fishery as age 1 red snapper. Red snapper enter the directed fishery at age 2 and are harvested throughout the balance of their lifespan, which can last for over 50 years (Szedlmayer and Shipp, 1994; Render, 1995; Wilson and Nieland, 2001).

### *Ages 0 and 1*

Age 0 red snapper enter the Gulf penaeid shrimp trawl fishery at about 67 days in age and 50 mm TL. Assuming a July 1 start date, they would enter the fishery in early September but would not be fully recruited until they reached about 100 mm TL (Goodyear, 1995). Age 0 and age 1 red snapper densities are highest in the northern Gulf at depths between 18 and 55 m, from the Alabama-Florida border to the Texas-Mexico border (Gallaway et al., 1999). Our review of the NMFS post-1998 observer data file showed that red snapper juveniles are only occasionally taken in the eastern Gulf offshore Florida.

Within the 18- to 55-m depth range in the western Gulf, red snapper settle over all substrates but show an immediate attraction to low-relief, relic shell habitat that provides protection from predation. This oyster shell habitat provides adequate shelter for new settlers, but as their size increases the fish need larger "hole" sizes for protection. Lingo and Szedlmayer (2006) and Piko and Szedlmayer (2007) conducted *in situ* studies using predator exclusion cages. Shell habitat with predator exclusion cages had significantly more age 0 red snapper than habitat without cages. However, as the fish became larger (>60 mm TL), they moved to concrete block habitat with larger holes and adequate predator protection such that the cage effects were no longer evident.

Szedlmayer and Lee (2004) and Wells (2007) provide strong evidence of an ontogenetic shift from low-relief to higher-relief habitat with size and age. Szedlmayer and Lee (2004) documented a transition in age 0 red snapper from open or low-relief habitat to artificial reefs having relief consisting of 1-$m^3$ concrete blocks. Settlement was observed in July and the newly settled (most <40 mm TL) fish were mostly found over open habitat. At the time of settlement, the reef habitat was occupied by age 1 fish between 100 and 200 mm TL. Age 0 fish began moving onto the reefs as they reached sizes approaching 100 mm TL and by December age 0 fish were found almost entirely on the reefs from which the age 1 fish had abruptly disappeared (Figure 1). Wells (2007), also working offshore Alabama, observed an increase in mean size corresponding to a shift from sand (96.1 mm TL) to low-relief shell (127.0 mm TL) to high-relief habitat (172.3 mm TL).

1 3/4"

4"

4 to 8"

5"

7"

Szedlmayer and Lee (2004) examined diets of juvenile red snapper between 70- and 160 mm standard length (SL) collected from both reef and non-reef habitat. They observed a diet shift as fish moved from open to reef habitat. The dietary shift reflected feeding more on reef prey than on open-water prey. The shift in habitat and diet suggested differential habitat value based not just on predation refuge but increased access to additional food resources. In contrast, Wells (2007) suggested that red snapper relied on sand- and mud-associated prey regardless of the habitat from which they were collected. However, it is difficult to evaluate this finding because the taxonomic resolution used by Wells (2007) does not appear to be at the level needed to assign the prey species to a specific habitat type.

Once the age 0 fish have occupied reef habitat having sufficient relief and complexity to afford protection from predation and provide additional food resources, they appear to show a high degree of fidelity to these habitats (Workman et al., 2002; Chapin et al., in press). Tagged fish were repeatedly sighted at the same reef over a two-month period, and fish that dispersed as far away as 0.43 km returned to the capture reef within about 25 min. Workman et al. (2002) also observed that the presence of age 1 fish appeared to limit recruitment of age 0 fish to a reef, but as age 1 fish left the reefs, new age 0 recruits were observed. These observations were supported by laboratory studies in which larger red snapper excluded smaller red snapper from reef structures (Bailey et al., 2001).

In summary, larval age 0 red snapper undergo metamorphosis and settle to the bottom in late July at sizes between 16 and 19 mm TL. They are attracted to any low-relief habitat providing cover, but the cover requirements change as the fish grow. Initially, relic shell-ridge habitats are ideal for these small fish, and the greatest known extent of these habitats occur in the mid-shelf zone offshore Alabama (Schroeder et al., 1988; Parker et al., 1992; Schroeder et al., 1995; Dufrene, 2005). In this region, shell-ridge habitat covers about 15% of the sea floor (Dufrene, 2005). Coverage by natural rock reef having greater relief and complexity than relic shell ridges is likely much smaller. Overall, Parker et al. (1983) estimated that 3% of western Gulf mid-shelf seafloor between Pensacola, Florida, and Pass Cavallo, Texas, contained reef habitat, with only 1.6% of this area consisting of reefs having relief >1 m.

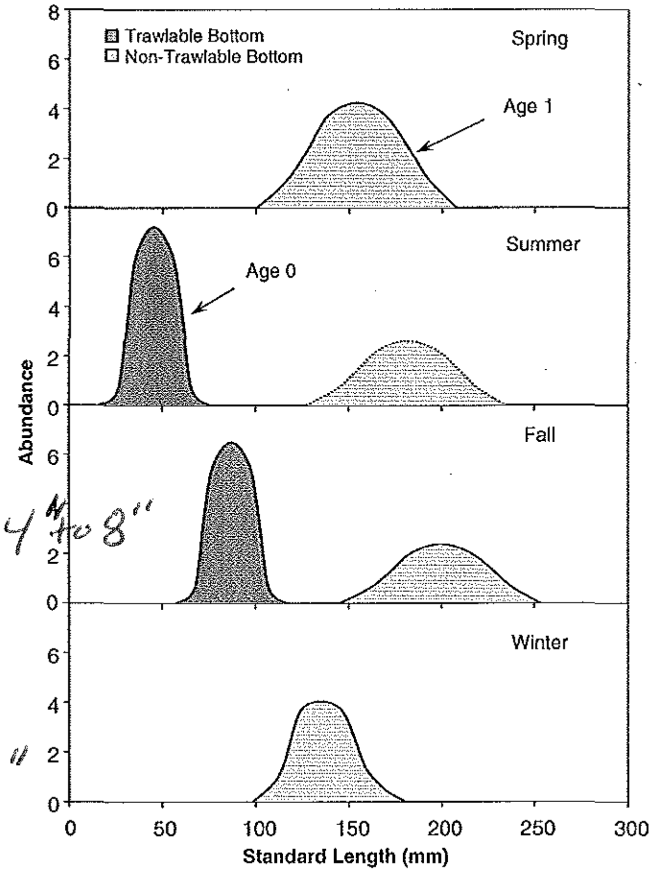


Figure 1 A diagrammatic representation of the shift in distribution of age 0 red snapper (small size group) from trawlable bottom (dark shade) to non-trawlable reefs having intermediate relief (light shade) when age 1 fish move to large, complex reefs in winter. Based on Figure 2 in Szedlmayer and Lee (2004).

Most age 0 fish move onto reefs with intermediate relief (e.g., 1-$m^3$ structures) by December and appear to occupy these reefs until the following December. At this time, the 18-month-old fish have grown to sizes of approximately 200 mm TL and may require greater relief than is afforded by the intermediate-sized reefs. They begin recruiting to large reefs like natural rock outcroppings, offshore petroleum platforms, and large artificial reefs during their second winter at about 18 months of age (Stanley, 1994; Nieland and Wilson, 2003). In January, these

3/4"

fish are classified as age 2 fish, even though they are only 18 months old in biological age.

The natural mortality rates for age 0 and age 1 fish are not well documented. Nichols et al. (2005) used the SEAMAP size, age, and abundance data for red snapper in conjunction with shrimp effort data to estimate M = 0.6 per year (SE = 0.36) for age 1 fish. Assuming M = 0.6, SEDAR7 (2005) estimated that F for age 1 red snapper in the western Gulf was 0.62. Thus, total mortality for age 1 red snapper was estimated to be Z = 1.2.

The estimate of M = 0.6 for age 1 red snapper was used by SEDAR7 (2005) to infer M = 1.0 for age 0 based upon the Goodyear (1995) stock assessment, which assumed M for age 1 was 60% of M for age 0. Based on this value of M, SEDAR7 (2005) estimated an age 0 F of 0.52 such that $Z_{age0}$ was 1.52.

However, Wells (2007) estimated instantaneous daily rates of M = 0.017 (or more) for age 0 red snapper between age 140 and 200 days that were trawled from a low-relief shell-bed habitat in an area offshore Alabama where commercial shrimp trawling does not occur. Projected to an annual rate, M would be estimated to be on the order of 6.2. Assuming a July 1 start date, this 61-day period would be between November 18 and January 16. This period corresponds to the timeframe when age 0 fish would be moving to high-relief habitat where they are not vulnerable to trawling. We believe the estimates of M derived by Wells (2007) are unrealistically high because they reflect both emigration and mortality.

Szedlmayer (2007) provided diver counts of juvenile red snapper (ages 0 and 1) on artificial shell and shell/concrete block habitat off coastal Alabama for the years 1998 to 2002. When these data are arrayed by year class (Figure 2), estimates of Z ranged from 2.1 to 3.2, averaging 2.6. The habitat studies were in the artificial reef area off coastal Alabama where commercial shrimp trawling does not normally occur, and the habitats showed no sign that trawling occurred in this area over the life of the study. This suggests most, if not all, of the Z values would consist of M or natural mortality. This estimate of M may also be confounded by not accounting for emigration of fish to larger structures. Overall, Szedlmayer (2007) estimated M for age 0 red snapper to be on the order of 2.0 (1.96), and also suggested higher mortality for stronger year classes than for weaker year classes (Figure 2). Szedlmayer and Conti (1999) observed a similar pattern of increased mortality with more abundant year classes based upon trawl collections from the same region. Collectively, these observations are consistent with the premise that habitat is a limiting factor for juvenile red snapper at observed levels of recruitment.

Gazey et al. (2008) conducted a length-based, age-structured modeling analysis for juvenile red snapper using monthly size and abundance data collected by observers on shrimp vessels. These preliminary results suggest Z for age 0 red snapper appears to be about 2.2, reasonably consistent with the independent estimates of Z = 2.6 by Szedlmayer (2007). Both of these estimates are higher than Z = 1.5 estimated by SEDAR7 (2005). The Gazey et al. (2008) Z estimates for age 1 fish was 1.3 as opposed to the Z = 1.2 used by SEDAR7 (2005). The observer data reflect higher mortality for stronger year classes than for weaker year classes, also supporting the contention that habitat limitation is an important factor governing the dynamics of juvenile red snapper.

Overall, we suggest the best estimate of average M for age 0 fish is 2.0, based largely on estimates from artificial shell and concrete block habitats in areas without trawling (Szedlmayer, 2007), and size and abundance data collected by observers on

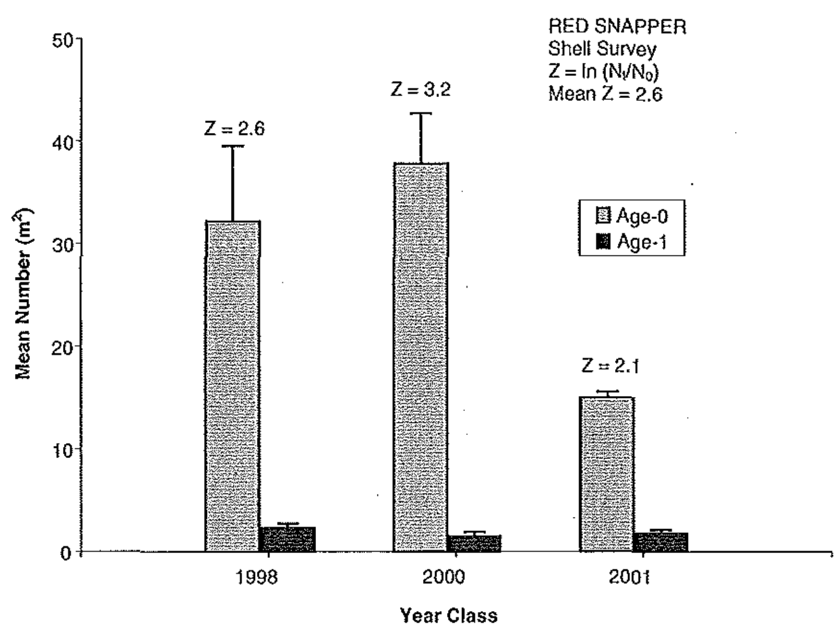


**Figure 2** Estimates of annual mortality for age 0 to age 1 red snapper based upon data from Szedlmayer (2007). Samples were taken in the artificial reef area off the coast of Alabama where shrimp trawling does not occur. Thus, Z should consist entirely of natural mortality (M).

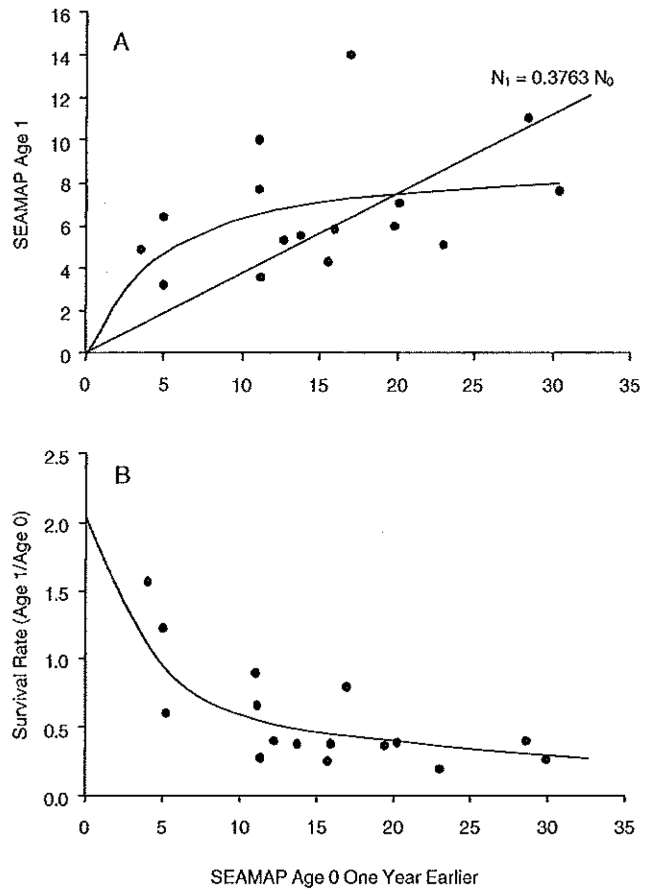


**Figure 3** Evidence of density dependence in red snapper mortality rate from age 0 to age 1 is present in the SEAMAP data, when age 0 numbers are used to predict either age 1 numbers the next year (no density dependence would result in proportional response on average, e.g., $N_1 = 0.3763\ N_0$) or survival rate to age 1. Note that the appearance of a flat response in Panel A and the decreasing response in Panel B could be due to an errors-in-variables effect; i.e., age 0 measurement errors (Source: SEDAR7 Stock Assessment Report).

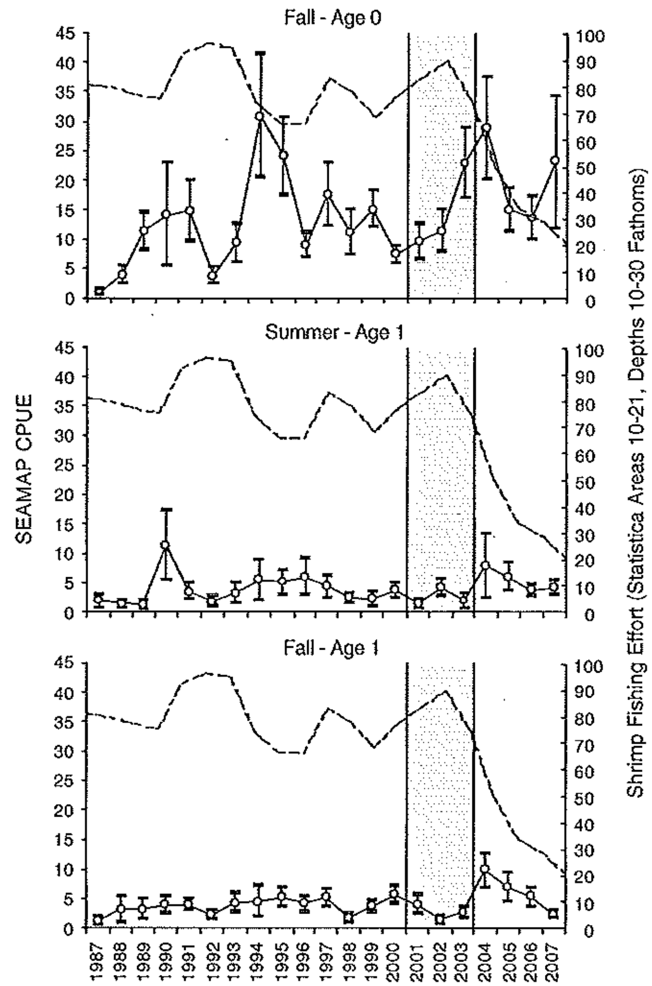


**Figure 4** Shrimp fishing effort (nominal days fished, dashed line) from LGL (2007) and juvenile red snapper abundance, 1987–2007, provided by B. Pellegrin, NMFS, Pascagoula Laboratory. Shaded area represents the reference period for evaluating shrimp fishing effort and juvenile red snapper bycatch mortality reductions.

shrimp vessels (Gazey et al., 2008). If M for age 0 is about 2.0, as suggested, then following Goodyear (1995) and SEDAR7 (2005), M for age 1 would be 1.2 (0.6 × 2.0).

The annual natural mortality rates for age 0 = 2.0 and for age 1 = 1.2 equate to daily rates of M = 0.0054 and 0.0033. As shown by Table 1, total natural mortality for age 0 red snapper recruits over the 298-day balance of their first year would be 1.6 and 1.2 for their second year. An estimated 31 of the initial 521 survivors entering the fishery following the pre-recruit stages, as described above, would live to age 2.

SEAMAP data provide evidence consistent with density dependence in red snapper mortality rate from age 0 to age 1 (Figure 3; SEDAR7, 2005). In addition, the results of a stock reduction analysis (SRA) conducted as part of SEDAR7 also suggested that density dependence for these young age groups was occurring (SEDAR7, 2005). Last, shrimp trawl bycatch mortality for juvenile red snapper has undergone a 75% reduction since the 2001–2003 baseline period, yet only moderate (if any) rather than exponential increases in age 1 abundance has been realized (Figure 4). The combination of habitat scarcity, site fidelity, exclusion of smaller conspecifics from reef habitat by larger fish, and variation in juvenile M with abundance, as described above, suggests habitat is a limiting factor for juvenile red snapper.

*Ages 2–7*

Red snapper enter the directed fishery at about age 2 and are heavily exploited by directed and recreational fishers for most of their remaining life. They occur across the shelf to the shelf edge and demonstrate an affinity for vertical structures (Patterson et al., 2001a), especially between 2 and 7–10 years of age. They show very rapid growth during the first 8 to 10 years of life (Szedlmayer and Shipp, 1994; Patterson, 1999; Nelson and Manooch, 1982; Patterson et al., 2001b; Wilson and Nieland, 2001; Fischer et al., 2004) (Figure 5). After this period, fish continue to grow but at slower rates. Although still found

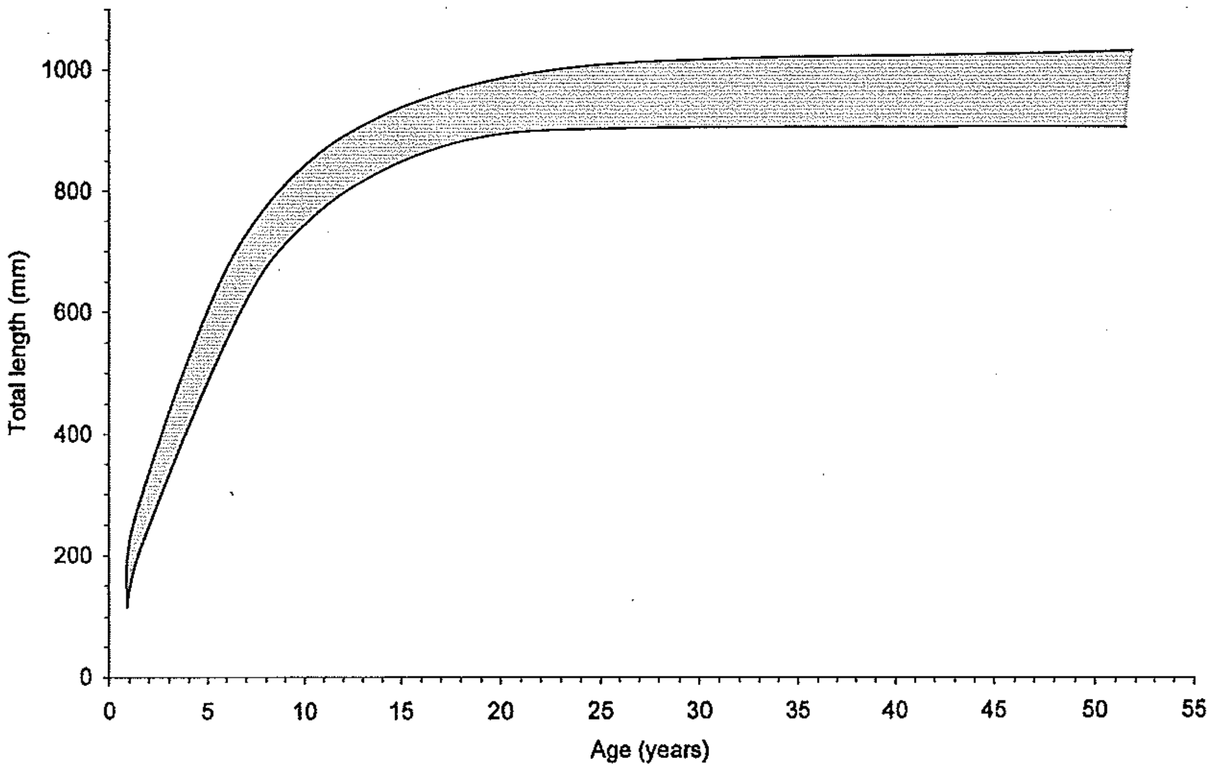


**Figure 5** Envelope of von Bertalanffy growth model results for Gulf of Mexico red snapper based upon Nelson and Manooch (1982), Szedlmayer and Shipp (1994), Manooch and Potts (1997), Patterson (1999), and Wilson and Nieland (2001).

on reef structures, these larger fish expand their habitat and may use open areas as well (Szedlmayer, 2007). Because of these differences, we break our discussion into age groups 2 to 7 and ages 8+. 8" 15"

At the beginning of age 2, young red snapper are generally between 200 and 375 mm TL (Goodyear, 1995). It is at these sizes that they enter the directed fishery and recruit to large reefs. These include natural hard substrates with relief on the order of meters, e.g., reef pinnacles, exposed rock ledges, and shelf-edge banks, as well as artificial reefs like offshore oil and gas structures, shipwrecks, and constructed artificial reef areas. Wells (2007) states that "the premise that natural reefs are scarce is a misconception" (103), citing the presence of extensive shell ridges in the north-central Gulf (Schroeder et al., 1995; McBride et al., 1999; Dufrene, 2005) and inner-shelf reef banks and ledges as evidence to the contrary. We disagree with the identification of shell substrate as "reef" habitat. These habitats are actually shifting shell substrates, the distribution of which can change from year to year. They have little similarity to hard limestone reef habitat. In a geological survey, Dufrene (2005) characterized the inner-shelf area offshore eastern Louisiana to panhandle Florida and suggested that this benthic habitat was about 15% shell and 85% soft sand mud substrate. The vast majority of the inner shelf in this area, as well as elsewhere, is composed primarily of sand, mud, and silt, with little or no vertical relief (Ludwick, 1964; Kennicutt et al., 1995).

On a larger spatial scale, Parker et al. (1983) estimated that 2,571 km$^2$ of natural reef habitat (3.3% of the bottom) are present at depths between 18 and 91 m in the region between Pensacola, Florida, and Pass Cavalla, Texas. Of this, only 1.6% (1,285 km$^2$) was comprised of reefs having relief >1 m. Offshore areas known to contain large natural reefs are protected by the Minerals Management Service (MMS) by imposing "No Activity Zones" around them. In the northern Gulf, the total area of these zones is about 293 km$^2$ (Stanley and Wilson, 2003). Most of these areas are outside the depths surveyed by Parker et al. (1983). On a total area basis, natural reef habitat suitable for age 2 to 7- to 10-year-old red snapper is a scarce commodity (1,578 km$^2$, 1,285 km$^2$+ 293 km$^2$) in the northern Gulf relative to the amount of sand- and mud-bottom habitat.

The primary artificial reef habitats in the Gulf include offshore oil and gas platforms and a 3,108-km$^2$ area offshore Alabama within which about 10,000 artificial reefs are present (Minton and Heath, 1998). Generates 60 million The footprint areas of the Alabama artificial reefs are typically small, about 9.3 m$^2$ on average. Assuming 10,000 structures are presently in place, this would equate to a total area of 23 acres or about 0.1 km$^2$ of artificial reef. The northern Gulf of Mexico also contains on the order of 4,000 oil and gas platforms. These structures provide about 12 km$^2$ of artificial reef habitat (Gallaway and Cole, 1997). On a spatial basis, the artificial reef contribution to total high-relief reef habitat in the northern Gulf has been small (an additional 12.1 km$^2$ to a natural reef area of about 1,578 km$^2$).

In summary, reef habitat with relief on the order of meters constitutes a small fraction of the total shelf area of the western Gulf of Mexico. Considering both natural and artificial reefs, the

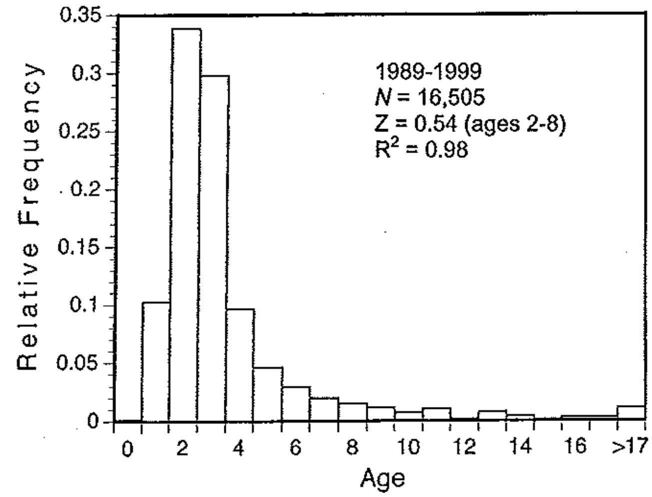


**Figure 6** Estimated age frequency of red snapper residing at offshore oil and gas platforms in the northern Gulf of Mexico estimated from fish killed by explosive structure removals (Source: Gitschlag et al., 2003).

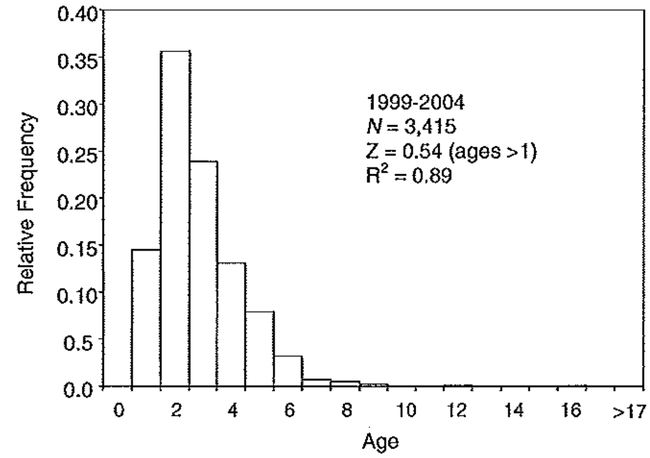


**Figure 7** Estimated age frequency of red snapper residing at artificial reefs. Total mortality estimate from fishery independent age frequency distribution in the northeast Gulf of Mexico (Source: Szedlmayer, 2007).

total area of reef habitat on the western Gulf shelf is 1,578 km$^2$, less than 2% of the total shelf area. The area offshore Alabama where shell substrate habitat comprises an estimated 15% of the bottom area, and there are over 10,000 artificial reefs and numerous oil platforms, is an exceptional area compared to other regions of the northwestern Gulf because it contains relatively large amounts of both juvenile and adult red snapper habitat. Western Louisiana has a large number of offshore oil and gas structures but lacks the vast expanses of juvenile shell substrate habitat that occurs offshore Alabama.

Offshore oil and gas structures and other artificial reefs are, however, used by large numbers of red snapper between ages 2 and 7, and older fish may also occur at these habitats. Explosive removals of these platforms have been monitored and provide a fishery-independent measure of the age structure of resident red snapper (Gitschlag et al., 2003). Red snapper recruit to these habitats as early as age 1 (10%), but the populations appear dominated by age 2 (34%) and age 3 (29%) fish (Figure 6). Age 4 was the only other age group representing as much as 10% of the total population. The red snapper age distribution from these platforms suggested a high rate of total mortality ($Z = 0.54$; Figure 6). Red snapper are known to stratify by size at different depths around platforms in the western Gulf, with smaller fish located higher in the reef than larger fish (Render, 1995). Render (1995) also observed larger individuals to be less obligate in their association with platforms than smaller fish.

Szedlmayer (2007) estimated ages from otoliths for 3,415 red snapper collected from 94 different benthic artificial habitats off coastal Alabama (Figure 6). Age 1 fish comprised about 14%, age 2 (36%). and age 3 fish comprised 25% of the total population. No other age group comprised as much as 10% of the total population (Figure 7). These data also suggested the same high rate of total mortality at artificial reefs ($Z = 0.54$; Figure 7) as shown by Gitschlag et al. (2003).

*Population Size.* Stanley (1994) estimated that, on average, 5,307 (95% CI = 2,756, range 1,200 to 8,200) red snapper occupied each major oil platform offshore of western Louisiana in favorable red snapper habitat during the fall to winter period of 1992. Gallaway and Cole (1997) used this estimate along with distribution and platform size and count data to estimate that the total age 2 red snapper population present at oil platforms in the northern Gulf of Mexico was about 3 million (1.7–4.2 million) fish at the beginning of 1992. This compared to Goodyear's (1995) estimate of 4.2 million age 2 fish in the total red snapper population at the beginning of 1992. SEDAR7 (2005) estimated that the age 2 population size at the beginning of 1992 was about 3.7 million fish. If all these estimates were correct, the observations suggest that 70–80% of the total age 2 population occurred at oil and gas platforms in 1992. If this is true, then the platforms are used by age 2 fish much more than their proportional area would suggest. A possible explanation for such a distribution will be provided below.

Gitschlag et al. (2003) estimated red snapper population sizes at western Gulf offshore oil and gas platforms based on mortality counts associated with the explosive removals of nine of these structures. Results were provided for one platform removed in each of the years 1993, 1998, and 1999; for two platforms in 1994; and for four platforms removed in 1995. The 1995 removals were made during the May–September period and the mean number of red snapper believed to have been residing at these four platforms ranged from 487–1,193, averaging 774.5 (95% CI = 482.2 to 1,066.8). In 1995 there were on the order of 4,000 offshore oil and gas structures in the Gulf, which, multiplied times the average abundance estimated by Gitschlag et al. (2003), yields a total estimate of about 3.1 million red snapper at offshore oil and gas platforms in the western Gulf. Based on Gitschlag et al.'s (2003) age frequency estimates (see Figure 6), about 34% of these (1.1 million fish) would be age 2 fish. In 1995, the total number of age 2 red snapper in the western Gulf was estimated to have been 1.6 million red snapper (SEDAR7, 2005). Again, approximately 70% of the age 2 red snapper population was suggested to reside at offshore oil and gas structures. Thus, results from at least two independent studies (Stanley, 1994; Gitschlag et al., 2003) suggest that a high proportion of the age 2 red snapper population in the western Gulf of Mexico reside at offshore oil and gas platforms.

*Food Habits.* The food habits of age 2 and older red snapper in the Gulf of Mexico range from the historical observations of Stearns (1884), Collins (1885), and Adams and Kendall (1891) to present-day investigations. The first comprehensive study of red snapper food habits in the northern Gulf after the turn of the century was reported by Moseley (1966). He collected 712 red snapper stomachs of which 187 contained food. Moseley (1966:96) suggested that red snapper should be considered polyphagous, as both juveniles and adults "ate most anything that was readily available." On a volumetric basis, fish comprised 44% and 80% of the adult diet at two locations offshore Louisiana and from 40% to 59% of the diet at three locations sampled offshore Texas. Fish comprised less than 50% of the diet in only 2 of the 5 samples and, in each case, the sampled fish had gorged on tunicates, which are seasonally very abundant. Of interest, one of the tunicates (*Distalpia* sp.) was a colonial reef form, whereas the other (*Salpa confederate*) was a free-swimming, pelagic form. Little Sea Squirts

Moseley (1966:98) also observed that red snapper "do not always feed on reef forms," observing that, in addition to reef species, they fed on prey occurring over soft bottoms rather than at reefs. He noted that the availability of food found in snapper stomachs was probably comparable for mud, sand, and rocky-type habitats. He also observed that, while it appeared that red snapper may have foraged over soft bottoms, it might also be true that motile, soft-bottom prey species were not necessarily confined to sand and mud habitats, but may have ventured onto or near reefs.

Moseley's (1966) study was followed by red snapper investigations conducted by Bradley and Bryan (1975) offshore Texas. They collected 1,139 snapper at natural reefs along the 40-fm curve from Port Isabel to Galveston, Texas. Of these, 190 contained prey. Fish made up the highest percentage by volume for every season except summer, when the diet was dominated by the swimming crab *Callinectes danae* (39.2%). Bradley and Bryan (1975) also showed extensive feeding on tunicates (13% by number, 21% by volume) in spring samples. They noted that red snapper feed on those items that are most readily available, and the spring blooms of tunicates in some areas provide abundant grazing material. They concluded that fish (other than eels) constituted the primary food each season, and other important foods included eels, mantis shrimp, and rock shrimp in spring; crabs and rock shrimp in summer; and eels in winter.

Red snapper diet studies were conducted in the eastern Gulf offshore Florida by Beaumariage and Bullock (1976) and Futch and Bruger (1976). In this part of the Gulf, invertebrates appeared more important than fish in the diet of red snapper. The Florida shelf habitat is markedly different than the shelf habitat of the western Gulf (Alabama to Texas) based on oceanic currents, freshwater discharge, sediments, and biota (Gallaway, 1981).

Gallaway et al. (1981) characterized the food habitats of red snapper at the Buccaneer Gas and Oil Field platforms located offshore Galveston, Texas, at depths of about 10 fathoms. They suggested that red snapper moved away from the platforms during the late night to early morning period to feed over soft bottoms. Hastings et al. (1976) obtained similar results for lutjanids at research platforms in the northeastern Gulf. Peabody and Wilson (2006) also suggested that nocturnal movements of red snapper away from Louisiana platforms was related to feeding behavior.

Ignoring squid, which was used for bait, Gallaway et al. (1981) reported that the gut contents of red snapper in winter contained mainly fish (small carangids, mainly the platform-associated rough scad). In spring, the diet was dominated by mantis shrimp (69%), and in summer the diet was dominated by fish (unidentified fish 23.5%, Atlantic cutlass fish 19.3%, and carangids, probably scad, 18.6%) and mantis shrimp (29.5%). In fall, crustaceans (shrimp 53.2% and crabs 17.2% for a total of 70.4%) and fish (26.6%) dominated the diets. Clearly, soft-bottom prey were a major component of the diet, but reef-associated fish were taken when abundant.

Siegel (1983) described red snapper food habits for habitats sampled offshore Alabama and some samples from Louisiana and Florida. For adults, fish and crabs constituted the main part of the diet. Of interest, all sizes of adults were noted to consume crabs, rock shrimp, penaeid shrimp, larval decapods, and larval mantis shrimp.

Ouzts and Szedlmayer (2003) examined the diets of red snapper collected from the artificial reef area offshore Alabama among four diel feeding periods (dawn, day, dusk, and night) and among three standard-length size classes: small (200–299 mm SL), medium (300–399 mm SL), and large (400–499 mm SL). A total of 432 stomachs were examined, of which 164 contained prey. Prey items were assigned a habitat association based upon the literature, personal observations made by the authors, and consultations with experts on the prey group in question. Small red snapper fed mostly on reef and sand prey types; medium red snapper fed on similar portions of reef, sand, and mixed habitat prey types; and large red snapper fed mainly on prey observed to use a variety of habitats. Red snapper were indicated to feed throughout the 24-hr cycle, with mean gut fullness being significantly lower at dusk than for the day period. Fish were the dominant prey throughout the 24-hr cycle. The second-most important prey group changed with period: shrimp were codominant for dawn, tunicates for day, and crabs were codominant for dusk and night periods.

The Szedlmayer and Lee (2004) food habitat studies of red snapper from open bottom and artificial reefs offshore Alabama were dominated by juveniles <200 mm SL as described above. However, 61 specimens were collected from reefs that ranged from 200 to 250 mm SL. For these fish, the principal prey categories on a volumetric basis were fish (59.7%), shrimp (27.8%), and crabs (12.5%). For the fish-prey category, approximately 65% were reef-associated taxa, including blennies (37.7%), *Halichoeres* sp. (13.0%), Serranidae (9.0%), *Serranus* sp. (2.9%), and *Centopristes* sp. (2.3%). The dominant "shrimp" taxa in the large red snapper stomachs included mantis shrimp (42.4%), rock shrimp (29.3%), Alpheidae (13.4%), Hippolytidae (11.5%), and unidentified shrimp (3.4% of the total shrimp component).

Szedlmayer and Lee (2004) classified rock shrimp, Alpheidae (pistol shrimp), and Hippolytidae (cleaner shrimp) as reef-associated taxa and mantis shrimp as open-bottom residents. On this basis, reef shrimp constituted 54.2% of the shrimp eaten as compared to 42.4% that were from open-bottom habitats. Rock shrimp have been treated as open-bottom species by other investigators. This species is most abundant on hard mud and/or shell substrates (NOAA, 1985). Offshore Alabama, the high density areas for rock shrimp mapped by Darnell et al. (1987) generally correspond to the area of shell-ridge or "ragged bottom" habitats described above, thus the reef designation by Szedlmayer and Lee (2004). However, this species is not typically found in high numbers on reefs having high vertical relief like that used by adult red snapper. If one treats rock shrimp as an open-habitat organism, approximately 72% of the shrimp in the diet of red snapper come from open bottoms as compared to about 25% from reefs, mainly pistol and cleaner shrimp.

The Szedlmayer and Lee (2004) data indicate that red snapper in the 200–250 mm SL length range on artificial reefs offshore Alabama fed on both reef and open habitat prey types. Even if all crabs and all the shrimp but pistol and cleaner shrimp are treated as soft-bottom species, reef prey still constituted about 46% of the total diet based upon this data set.

McCawley and Cowan (2007) evaluated red snapper food habitats for fish from the Alabama artificial reef area that were mainly caught by recreational fishermen between May 1999 and April 2000. They examined 656 red snapper stomachs, of which 268 contained prey. The empty and bait-only stomachs were excluded from further analyses. The fish with prey ranged from 240–913 mm fork length (FL) (mean = 463 mm FL). On an average percent weight basis, unidentified material contributed the largest proportion to the observed diets (35.9%) followed by crab (20.2%), fish (19.5%), adult mantis shrimp (12.6%), and pelagic zooplankton (8%). McCawley and Cowan (2007) also recalculated the mean% weight values after removing the unidentified material from the analyses. On this basis, fish dominated the diet (28.7%), followed by crabs (26.8%), pelagic zooplankton (23.5%), mantis shrimp (16.1%), and miscellaneous benthic species (2.2%).

McCawley and Cowan (2007) estimated only 1.3% of the red snapper diet (excluding unidentified material) consisted of reef-associated organisms, 1.3% of the diet consisted of *Sargassum*-associated species, and 0.7% consisted of species occupying a variety of habitats. In contrast, the dominant components of the diets were species associated with sand and mud habitats (41.2%) and the water column (31%, mainly larval mantis shrimp and larval fish). Their interpretation of these data was that adult red snapper were almost, if not entirely, trophically independent of the reefs on which they lived.

McCawley et al. (2006) collected diel food habitat data for red snapper in the Alabama artificial reef areas in July and August 2000. A total of 109 red snapper stomachs were collected from fish 295 to 560 mm FL (mean = 382 mm FL). Of these, 46 contained prey. When examined on a diel basis, red snapper appeared to feed throughout the day and night, with no obvious pattern in feeding periodicity. Unidentified material was the dominant food category in both day (35.1%) and night (31.4%) periods, followed by fish (34.7% day and 30.6% night), crabs (12.7% day and 12.2% night), and rock shrimp (10.4% day and 9.3% night). Mantis shrimp were not observed in stomachs collected during the day but comprised 9.4% by weight in the night samples. Once more, over half of the fish and crab category consisted of unidentified specimens. McCawley et al. (2006) concluded that less than 2% of the red snapper diet came from reef-associated organisms based upon the defined habitat associations of the identified prey organisms.

In summary, red snapper appear to be opportunistic feeders that feed throughout the day and night. They have been documented to feed on abundant swarms of water column organisms like pteropods and free-swimming tunicates when these occur, as well as on fish, crabs, and shrimp from surrounding soft bottoms, and on reef-associated fish, crabs, encrusting tunicates, and shrimp. However, more accurate estimates of the relative proportions of their diet derived from different habitats are needed. It is clear, however, that many studies show substantial feeding on reef prey types, which supports the contention that red snapper are obtaining significant food resources from reef habitats.

*Site Fidelity.* The degree of movement and/or site fidelity shown by red snapper in the young adult age group has been addressed by historical and recent studies. Beaumariage (1969) tagged and released 312 red snapper off the coast of Florida and reported a return rate of 26%. All but eight of these were reported to have been recaptured at the release site after being at liberty for an average of 113 days. These data indicated a high degree of site fidelity (>90%) over at least the short term (113 days or about 3.8 months). Beaumariage and Bullock (1976) also reported that red snapper in shallow water showed a high degree of site fidelity and that the only extensive movements occurred in water deeper than 15 fathoms.

Fable (1980) tagged 299 red snapper at natural reefs off the coast of Texas and 17 fish were recaptured. Of these, 16 were recaptured at the release location, and one that had been at liberty for 162 days, or about 5 months, had moved 5 km. Gallaway et al. (1981) reported very high short-term fidelity for red snapper at platforms in the Buccaneer Gas and Oil Field offshore Galveston, Texas, over the summer months. All of the tags returned by fishermen or noted during visual SCUBA census were found at the site where the fish had been released. However, fishing pressure was intense in the Buccaneer Oil and Gas Field, and most of the entire annual recruitment was estimated to have been harvested each year.

Several other mark-recapture studies have been conducted at artificial reefs offshore Alabama. Szedlmayer and Shipp (1994) tagged and released 1,155 relatively small red snapper (mean $\pm$ SE = 287 $\pm$ 0.9 mm TL; size range 177–410 mm TL). A total of 146 tagged fish were recovered, but only 37 of these had known recapture locations. A total of 27 (74%) of these fish were recaptured within 2 km of their release site, and 21 of these were caught in the immediate vicinity of their release location. The greatest distance moved by an individual fish was 32 km, and distance moved was not related to time at large (see Figure 6 in Szedlmayer and Shipp, 1994). These data were interpreted to suggest a high degree of site fidelity.

Watterson et al. (1998) reported results of a red snapper mark-recapture study conducted off the coast of Alabama from March 1995 to January 1997. Nine artificial reef sites, with three each being placed at 21-, 27-, and 37-m depths, were constructed 18 months prior to the start of the study. A total of 1,604 fish were tagged between March 1995 and October 1996. The tagged fish had a mean TL ($\pm$SE) of 336 mm ($\pm$1.84), and 80% were less than 400 mm TL. The majority of these fish were 3-year-olds or less. A total of 167 individual fish were recaptured. Hurricane Opal passed within 40 km of the reef sites in October 1995, about eight months into the study. Eighty percent of recaptured red snapper that were not at liberty during Opal were recaptured at their site of release, suggesting strong site fidelity. Fish that were at liberty during Opal showed greater movement. They had a significantly higher likelihood of movement away from their site of release and moved far greater distances than fish not at liberty during Opal. The at-liberty fish moved an average of 32.6 km, with eight fish moving over 100 km and three fish moving over 200 km. The fish not at liberty during Opal moved much shorter distances, from 1.7 to 2.5 km. Clearly, Hurricane Opal affected the movement and site fidelity of the fish.

Patterson et al. (2001a) continued the mark-recapture study of Watterson et al. (1998) through August of 1999. Another strong hurricane occurred during the extended study. Hurricane George passed within 50 km of the reef sites in September 1998. In total 2,932 red snapper were tagged, with 2,053 released at their capture site and 879 released at locations other than their capture site. Mean TL ($\pm$SE) of these tagged fish was 335.1 $\pm$ 1.34 mm; thus, most were age 3 or less. Overall, 519 individual fish were recaptured, with 193 recaptured on tagging trips and 326 recoveries made by fishers. Of the fish recaptured at tagging sites, 188 (97%) were captured at the site where they had been released while five had changed location.

Location of recapture was reported for 232 recoveries reported by fishers (Patterson et al., 2001a). Mean time at liberty was 404 days, which was 2 to 3.5 times longer than the mean time at liberty for recaptures from previous studies. Of the fish recaptured by fishers, 36% were captured within 2 km of the release site. One fish, which had been at liberty for 598 days, moved 352 km to the east; another, which had been at liberty for 1,367 days, moved 259 km southwest of its release site. In contrast, the maximum time at liberty for a tag recovery by fishers was 1,501 days, and this fish was caught only 3.5 km from its release site. The mean vector of reported movement was 42.4 km to the east for individuals at liberty during hurricanes and 7.4 km to the east-northeast for individuals not at large during the two hurricanes. The movement observed by Patterson et al. (2001a) was greater than had been previously reported for red snapper in the northern Gulf.

Patterson and Cowan (2003) used the data described by Patterson et al. (2001a) to estimate site fidelity by modeling the decline in recaptures at the tagging sites over time to obtain an annual instantaneous rate of decline or D (daily rate $\times$ 365 days). This value would be equal to the sum of total annual instantaneous mortality (Z) and total annual instantaneous emigration defined as Q. The authors assumed that no fishing mortality occurred at the site and calculated M following Royce (1972) and Hoenig (1983). These approaches yielded M estimates of 0.0868 and 0.0855, or an average of 0.08615. Once D and M (or Z) were calculated, Q was obtained by subtraction. Site fidelity (SF) was estimated as $e^{-Q}$. Estimated SF values ranged from 24.8% for all recaptures to 25.3% for all recaptures of fish that were released at their original capture location, to 26.5% for recaptures for fish tagged and recaptured in the intervals between hurricanes.

The above estimates of SF assumed that all tagged fish were recognized. However, these authors also recognized in an earlier publication that tag shedding occurs (Patterson et al., 2001a), but did not account for this tag shedding in their latter SF estimations. For example, the estimated 95% confidence interval for probability of tag retention for a fish at liberty for 200 days was 0.87–0.96, but for a fish at liberty for 755 days, the 95% confidence interval for probability of tag retention was only 0.05–0.37. We suggest that a major component in the decline in recapture fish was related to tag shedding, and this factor needs to be accounted for in SF estimation.

The estimates of $Z = 0.09$ (or M, since no fishing was believed to have occurred) are highly conservative for the age of the fish in question. As described above, Szedlmayer (2007) estimated ages from otoliths for 3,415 red snapper collected from 94 different artificial habitats offshore Alabama (see Figure 7). Based upon these data, Z for ages 2 to 16 was estimated to be 0.54. If this Z value is used, $Q = 0.93$ and SF would be on the order of 40%, which is still low as compared to historical studies.

Two additional studies have used conventional mark-recapture methods. Strelcheck et al. (2007) tagged 4,317 red snapper at 14 experimental artificial reefs off coastal Alabama between January 1999 and October 2002. Mean length at tagging was 335 mm TL ($\pm$63.3 mm SD). Some 629 recaptures were reported, of which 412 (65%) were made by the researchers at the original release site, and 217 recaptures were reported by fishers. Mean time at liberty was 401 days, with a range of 1 and 1,587 days. Most fish (86%) showed little movement, 2 km or less, from the release site. Mean and maximum distances moved were 2.1 km and 201 km. The mean dispersion rate from release sites was 8.6 m day$^{-1}$. Annual SF estimates were made following Patterson and Cowan (2003) and ranged from 48 to

52%. If Z for this area is 0.54 (Szedlmayer, 2007), SF would be estimated to be above 75%.

Strelcheck et al. (2007) concluded that the observations of high SF and low dispersal rates provided support for the hypothesis that artificial reefs offshore Alabama provide suitable habitat for adult red snapper. However, they suggested the ratios of instantaneous growth (G = 0.54) in weight to total mortality (Z = 0.7 to 0.9) were <1, indicating that the reefs off Alabama were not producing new biomass at current fishing mortality rates. In contrast, if Z = 0.54 (Gitschlag et al., 2003; Szedlmayer, 2007) was used, the G/Z ratio would be equal to 1.

In another conventional mark-recapture study, 5,614 red snapper were tagged between July 2002 and August 2005 (Diamond et al., 2007). Tag returns provided location information for 82 fish. Of these, 54% moved an average distance of 20.4 km. In the second program, over 9,000 fish were tagged by "Fish Trackers" (research personnel, volunteer anglers aboard charter headboats, and private boats) between 1983 and 2006. In that study, 60 returns were analyzed for movement. Most (72%) were recaptured at their release site, with 28% showing an average movement of 19.1 km. Diamond et al. (2007) concluded that the spatial scale of movements in this study was small enough to support the idea that red snapper stocks in the northern Gulf are relatively isolated and that there may be a separate demographic stock off Texas. Similarly, genetic studies have indicated that red snapper in the Gulf maintain a complex of semi-isolated populations in which relatedness is maintained over geologic time by gene flow, yet the populations are demographically independent over the short term (Gold and Salliant, 2007). Thus, all of these later studies (Strelcheck et al., 2007; Diamond et al., 2007; Gold and Salliant, 2007) support the view of limited movement and relatively high SF.

While there have been extensive mark-recapture studies of red snapper as described above, they all have the inherent difficulty of reliance on private fishers for accurate positional information for recaptures. Positional information from private fishers, especially for red snapper, is unreliable at best, and can only be counted on to add variance to SF estimations. This issue of confidence about positional information from private fisher returns has prompted a number of ultrasonic telemetry studies (Szedlmayer, 1997; Szedlmayer and Schroepfer, 2005; Schroepfer and Szedlmayer, 2006; Peabody and Wilson, 2006). Szedlmayer (1997) reported residence times on artificial reefs of 17–597 days, and Szedlmayer and Schroepfer (2005) estimated red snapper were resident on an artificial reef for a mean of 212 days, with an individual fish staying at one reef for up to 597 days. Using the previously published information along with new ultrasonic tagging studies, Schroepfer and Szedlmayer (2006) used event analysis described by Allison (1995) to provide a newer estimate of residence time on reefs. Fish were larger than previous studies (mean ± SD = 518 ± 140, range 301–840 mm TL, $n = 77$), which may account for some of the differences from previous conventional tagging studies. In this later study, however, the median residence time increased to 373 days or about one year.

Peabody and Wilson (2006) released 125 red snapper with acoustic transmitters at oil platforms arrayed in a circle around a salt dome about 50 km south of Port Fourchon, Louisiana. The mean size of these fish was 360 mm TL, and the range in length was 280–470 mm TL. Remote receivers were deployed on the platforms at 10–20 m depths and on artificial reefs within the circle of platforms. They detected 97 of 125 tagged red snapper released with transmitters. The majority (94%) of the tracked red snapper showed no movement between receiver locations on a daily, weekly, or monthly basis. There were 36 recaptures from fishers, with most (81%) captured at their release site. Seven recaptures were reported at locations other than their release site. Days at liberty for these seven fish ranged from 5 to 130 days, and distance traveled ranged from 2 to 25 km, but again, these reported recapture locations are subject to the same error as conventionally tagged red snapper. Peabody and Wilson (2006) estimated a maximum estimate of SF for six months was 90%. Assuming constant emigration rate over the next six months, they projected the annual SF would be 80%.

The higher estimates of SF obtained by Szedlmayer and Shipp (1994) and Strelcheck et al. (2007) as compared to the lower estimates of Watterson et al. (1998) and Patterson et al. (2001a), all working in the same general area off coastal Alabama, may be explained, in part, by the differences in the artificial reefs at the study sites. Reefs used in the Patterson et al. (2001a) studies were largely constructed of 55-gallon drums and newspaper dispenser machines, whereas the reefs used in the other studies were considerably more substantial (e.g., concrete tetrahedrons, concrete mats over pipelines, etc.). The small artificial reefs used by Watterson et al. (1998) and Patterson et al. (2001a) may have been more altered or dispersed by storms and hurricanes compared to the larger more stable artificial reefs used by Szedlmayer and Shipp (1994) and Strelcheck et al. (2007).

The natural mortality rate for age 2–7 red snapper may be higher than is the case for older fish. At present, it is assumed that M = 0.1 for age 2+ red snapper; i.e., this value is assumed to be constant across all ages from 2 to 53 (SEDAR7, 2005). We suggest that it is more reasonable to assume, based upon growth and habitat use patterns for young versus older fish, that natural mortality is higher at age 2–7 compared to fish greater than age 7. We also suggest that, given the scarcity of reef habitat and the relatively high estimates of SF, habitat limitation is a significant factor governing the dynamics of age 2–7 red snapper.

### *Age 8+*

As described above, red snapper grow rapidly over the first 8 to 10 years of life, after which growth slows (e.g., Fischer et al., 2004; see Figure 6). During this timeframe, snapper take up residence on structured habitat, and as the fish grow larger, there is an ontological shift to reef habitats with greater vertical relief and complexity. The reefs may provide protection from predation and increased prey resources (Szedlmayer and Lee, 2004; Piko and Szedlmayer, 2007). Small and intermediate (up to about age 10) red snapper show greater SF to reefs compared to the largest (greater than age 10) red snapper (Render, 1995; Szedlmayer, 2007). The most plausible explanation for these changes in SF is that older fish (age 8–10) reach sizes that render them largely invulnerable to predation, and they may spend a larger portion of their time over soft bottoms, especially areas with sea bottom depressions and lumps, etc. (Boland et al., 1983; Render, 1995; Nieland and Wilson, 2003).

In 1999, the National Marine Fisheries Service (NMFS) initiated an offshore bottom-longline survey designed to address the abundance, size, and age distribution of red snapper across the shelf of the Gulf of Mexico (Mitchell et al., 2004). Pilot studies were conducted in 1999 and 2000, sampling in two areas at depths between 64 and 146 m. In 2001, the annual longline survey was expanded to cover depths between 9 and 366 m (or 5 and 200 fm) across the entire Gulf. The longline sets were randomly located, stratified only by depth and longitude rather than by habitat.

Red snapper catches varied geographically and with depth (Mitchell et al., 2004). Only 12 red snapper were caught at the 269 stations east of the Mississippi River as compared to 232 snapper caught at the 324 stations sampled west of the Mississippi River. Differences in age and size of fish were also observed, with older, larger red snapper found in the western Gulf (up to 53 years in age, median 12 years, and median TL = 784 mm) and younger, smaller fish found in the eastern Gulf (up to 19 years old, median age of 6 years, median TL of 625 mm). Red snapper were most abundant at depths ranging from 55 m to 92 m, with catches declining both inshore and offshore of these depths (Mitchell et al., 2004).

The relative age distribution observed in these studies (see Figure 5 in Mitchell et al., 2004, summarized herein by Figure 8) showed that red snapper were fully recruited to the longline gear at age 8. Abundance declined from these levels in a linear fashion through age 22 and remained relatively consistent thereafter. The populations of red snapper vulnerable to longline fishing over soft bottoms appears to consist of fish larger than those that occur around reefs (compare Figures 6, 7, and 8). One explanation is that once the fish reach 8 to 10 years of age, they are no longer totally dependent upon structured habitats and can forage over open habitat with little threat from predation.

The prohibition of longline fishing inside of 92 fm in the western Gulf likely has been one of the most significant management actions taken by the Gulf of Mexico Fisheries Management Council (GMFMC). In some areas, large numbers of large fish may be dispersed over open habitat where they are not highly vulnerable to vertical line fishing. However, they can be efficiently harvested using longlines (e.g., Prytherch, 1983). This soft bottom pool of fish is now protected.

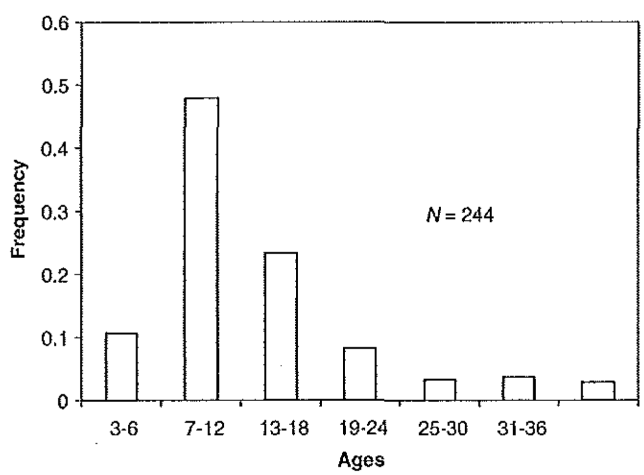


Figure 8 Age frequency of red snapper caught during NMFS research longline surveys from 1999 to 2002 in depths of 9–366 m (Source: Mitchell et al., 2004).

## *DISCUSSION*

Site fidelity provides an annual estimate of reef fish immigration or emigration from a reef. For red snapper, 2- to 3-year-old fish at artificial reef structures in shallow water show high fidelity to a site on temporal scales of months to a year, albeit the probability of detecting ultrasonically tagged red snapper at a site one year after release was only 50% (Schroepfer and Szedlmayer, 2006). Diamond et al. (2007) provided a list of factors that have been suggested to be important in affecting the percentage of fish that move compared to the percentage of fish that remain at a site. These included size or age of fish (Moseley, 1966), depth of capture (Beaumariage, 1969; Watterson et al., 1998), seasonal patterns due to water temperature or reproductive condition (Topp, 1963; Beaumariage and Bullock, 1976), hurricanes (Watterson et al., 1998; Patterson et al., 2001a), and translocation from the tagging site (Watterson et al., 1998; Patterson et al., 2001a; Peabody, 2004). The accuracy of positional data reported for tag returns by fishers can also be an issue regarding SF.

It has also been hypothesized that SF of reef-associated organisms is dependent both upon prey availability and the availability of suitable refuge, i.e., the resource mosaic hypothesis (Lindberg et al., 1990; Frazier and Lindberg, 1994) and density-dependent habitat selection (Lindberg et al., 2006). Reef-associated fish species that rely on benthic prey as the primary component of their diet may create a gradient of prey depletion (or feeding halo) around the reefs, resulting in negative feedbacks to reef fish energetics, residence times, and local abundance, particularly when the feeding halos of adjacent reefs overlap (Lindberg et al., 2006). The degree of prey depletion and associated negative feedback can alter the potential for sustained productivity of an artificial reef or reef complex. Bioenergetic demands increase as foraging area increases, resulting in increased emigration from resource-depleted reefs to reefs containing a greater abundance of prey.

In contrast, reefs or reef complexes that can sustain prey resources over time may potentially benefit reef fishes and fishery

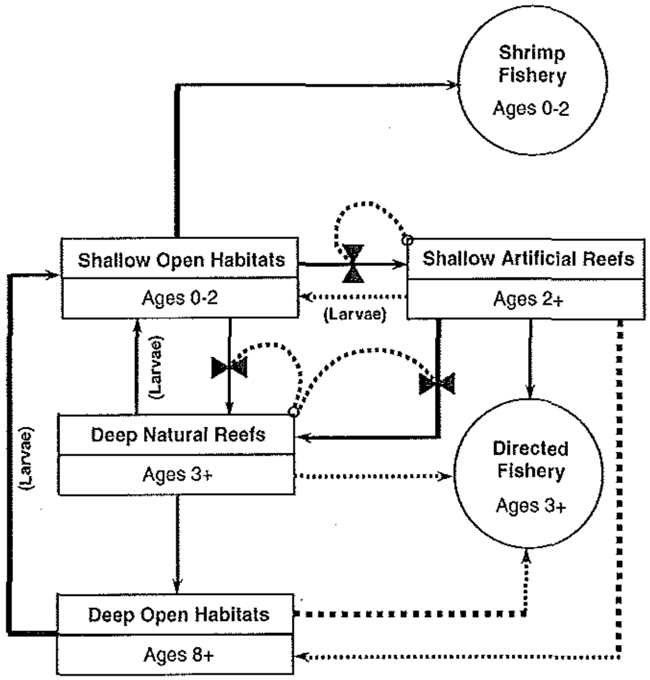


**Figure 9** Conceptual model of habitat use by age of red snapper. The fishery is heavily dependent on young fish inhabiting artificial reefs.

production by reducing the costs of foraging, increasing growth rates, and increasing SF. Under these conditions, the fish would tend to show less movement during foraging due to increased risks of predation and reduced proximity to shelter (Strelcheck et al., 2007). However, if reef densities are high in an area, the distances between them are shorter, and reef fish may move among these habitats more readily than they would otherwise, resulting in increased movement and an expanded home range. Red snapper in clustered habitats may be able to explore nearby alternative habitats with very little cost.

Mark/recapture studies support the idea that movement occurs on two scales. Large-scale climate events such as hurricanes increase the proportion of fish that move and the distances that these fish move. On the other end of the spectrum, many fish may move but only for distances of a few kilometers. These observations are well illustrated by Figure 1 in Strelcheck et al. (2007). Diamond et al. (2007) observed that almost all red snapper will relocate at some time during their lives if they survive long enough. They also noted, however, that the scale of movements they observed supported the hypothesis that, on a geographic basis, red snapper stocks in the northern Gulf are relatively isolated, with periodic long-range dispersement caused by hurricanes or some other factor that triggers long-range movements. They interpreted their data from Texas to be consistent with the idea of a separate demographic stock off Texas, as implied by Fischer et al. (2004) and Salliant and Gold (2004).

Once red snapper grow to about 8 years old, they are large enough to be invulnerable to most predation and occur over open habitat as well as at reef habitat. In the western Gulf, these fish are most abundant in longline sets at depths between 55 and 92 m (Figures 9 and 10). In this region, the zone of highest abundance of early larvae corresponds to the distribution of 8+ year adults taken by longlines (Figure 10). However, spawning is also known to occur across the shelf. The eggs and larvae are planktonic for about one month and then settle to the bottom as early age 0 fish. The natural mortality during this period is high, on the order of $M = 11.8$ (see Gallaway et al., 2007).

Although spawning occurs over most of the shelf, the age 0 new recruits are most abundant at depths between about 18

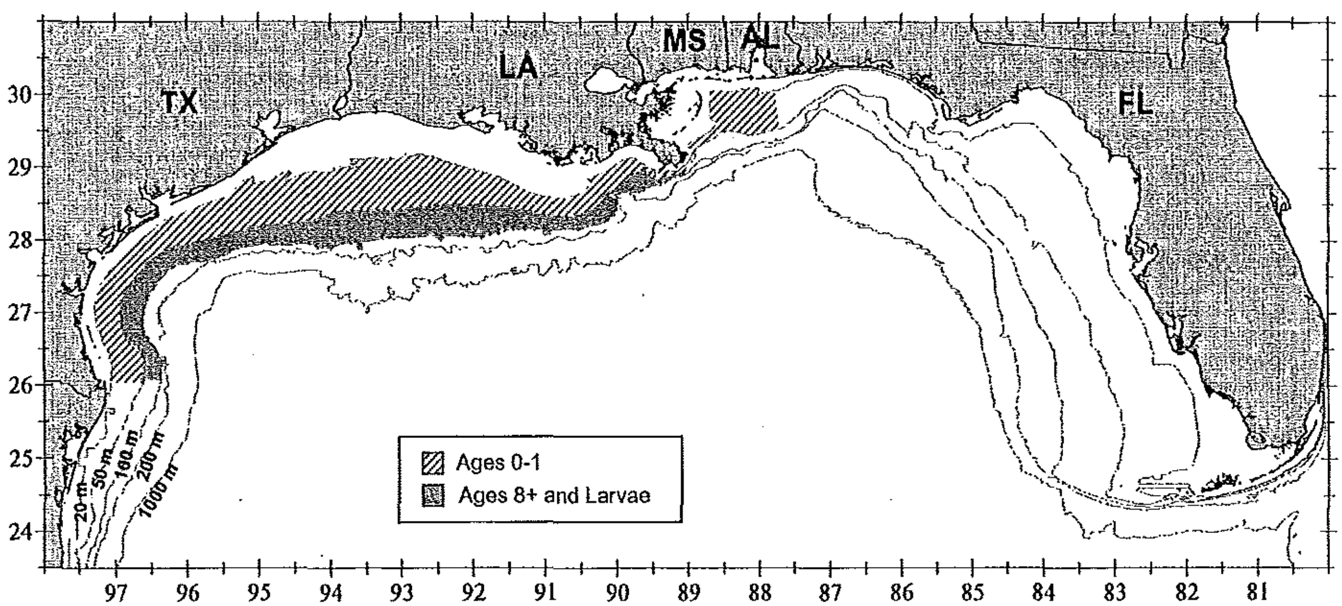


**Figure 10** Distribution of age 8+ red snapper (based on Mitchell et al., 2004), red snapper larvae (based on Lyczkowski-Shultz and Hanisko, 2008), and age 0–1 red snapper (based on Gallaway et al., 1999). These data suggest spawning mainly occurs in the western Gulf at depths between 50 and 100 m, and that the larvae are transported toward shore and settle at depths between 20 and 50 m.

and 55 m (Figure 10). Initially, they are abundant over all substrates but quickly become aggregated at low-relief habitats like relic oyster-shell beds (relief in cm), which affords protection from predation. As the fish grow, the degree of protection from predators provided by low-relief habitats diminishes, and they become large enough to be taken as bycatch in the shrimp fishery. Bycatch losses are greatest during the period from October to December.

By December, fish are able to occupy larger reefs (vertical relief about 1 m), which become vacant when their previous occupants (age 1 red snapper) move to reefs with even greater relief. The age 0 fish occupy these reefs from December of one year to December of the next year. All of the evidence is consistent with the premise that habitat is a limiting factor for age 0 to age 1 fish, as described above. The evidence includes habitat scarcity, site fidelity, exclusion of smaller conspecifics by larger fish, and variation in M with abundance.

Fish tend to move to larger artificial reefs as late age 1 or early age 2 fish. At offshore oil and gas platforms in the western Gulf, the younger, smaller fish occupy the upper water column, and larger, older fish occupy the deeper areas of the reefs. Offshore petroleum platforms may be particularly valuable because they provide shelter and feeding opportunities throughout the water column. The fish at artificial and natural reefs are known to forage on reef prey types but also forage away from the reefs, and small fish feed on water column prey as well. Small and intermediate fish at artificial reefs in shallow water (<50 m) show the highest degree of SF. Sometime after about age 8, red snapper begin to show less dependence on structured habitat and can also be found over open habitat. We suggest that this is essentially a size refugia, enabling them to spend greater amounts of time over benthic foraging grounds.

Other than the large shelf-edge banks and features like the pinnacle region off coastal Alabama, little is known about the distribution and spacing of natural reefs in the northwestern Gulf. As compared to natural reefs, artificial reefs are relatively small and occur in two main clusters: (1) oil and gas platforms off central and western Louisiana, and (2) the extensive artificial reef zones off Alabama. Off Alabama, the artificial reefs are clustered within specifically permitted artificial reef areas. The offshore platforms also occur as closely spaced clusters of platforms representing individual oil fields. Most of the artificial reefs are located in water <100-m deep, in the same zone where age 0 and age 1 fish are most abundant. Parker et al. (1983) noted that depths between 91 and 183 m in the Gulf were not surveyed for the presence of natural reefs because of gear and time constraints. They also noted that these depths were already known to contain "prime reef fish habitat and probably contribute significantly to the total amount" (Parker et al., 1983:937). However, the MMS designation of no activity zones to protect known reefs suggests the total area of shelf-edge reef habitat is small.

The creation of artificial reefs off Alabama and the deployment of petroleum platforms in the northwestern Gulf have been coincident with a shift in the fishery from a few well-known natural reef sites on the shelf to extensive artificial reef areas off Alabama and Louisiana (Camber, 1955; Carpenter, 1965; Goodyear, 1995). We suggest that there is evidence that a high (±70%) proportion of the entire age 2 red snapper population occurs at these artificial habitats. These observations and the relative scarcity of high-relief natural reefs (<1.6% of the shelf bottom area) have led us and others to speculate that natural reef habitat is a limiting factor for age 2–7 fish, and that artificial reefs have increased red snapper production in the western Gulf (Szedlmayer and Shipp, 1994; Shipp, 1999; Szedlmayer, 2007). Others (e.g., Cowan et al., 1999; Patterson and Cowan, 2003) have disagreed, arguing that based on Bohnsack's (1989) gradients of reef dependency, fishing intensity, reef availability, population control mechanisms, and behavior, red snapper are merely being attracted to artificial reefs rather than experiencing increased production because of these sites.

The observations that (1) younger (<10 year) adult fish appear to show higher SF than older fish, (2) natural mortality for age 0 appears to vary with year class strength, (3) red snapper recruitment today is higher than the estimated historical maximums, (4) fishing intensity on pre-recruit fish (ages 0 and 1) has been reduced in recent years by over 65% yet age 1 abundance has not increased, and (5) the decline in abundance of age 2 fish over open habitats (shrimp trawls and longline evidence) and their disproportionate abundance at artificial reefs all suggest increased production of young red snapper that is based on habitat enhancement by artificial structures.

As described above, a large fraction of the estimated total population of age 2 red snapper has been estimated to occur at artificial reefs, a very small component of the overall high-relief reef habitat. If true, one interpretation is that age 2 fish are being differentially attracted to these habitats, perhaps due to the predominance of artificial reefs and platforms in mid-shelf zones, where juvenile red snapper are most abundant. Once there, they show high SF for months to up to a year or more. Overall, relatively high survival and SF is shown for red snapper at artificial reefs between ages 2 and 3 (see Figures 6 and 7). Abundance between age 3 and 4, however, typically declines dramatically (e.g., Figure 6), suggesting higher fishing mortality and/or increased movement. Based upon Gitschlag et al. (2003), few fish survive or remain at offshore oil and gas platforms beyond ages 5 or 6.

There are few data describing the size/age distribution of red snapper at natural reefs in the northern Gulf. However, red snapper length and age data based on scales were collected at the Flower Garden Banks, large natural reefs in the northern Gulf, by Zastrow (1984). Samples were also obtained from south Texas fishing banks (i.e., Aransas, Baker, South Baker Dream, and Big Adam Rock) and from headboats fishing out of Galveston. The Galveston fish may have come from artificial reefs (platforms) rather than natural reefs. At the East and West Flower Garden Banks, age 2 fish were scarce, and peak abundances were observed for age 3–5 fish (middle panel of Figure 11). These data suggest that red snapper populations at deep natural reefs in the northern Gulf consist mainly of fish

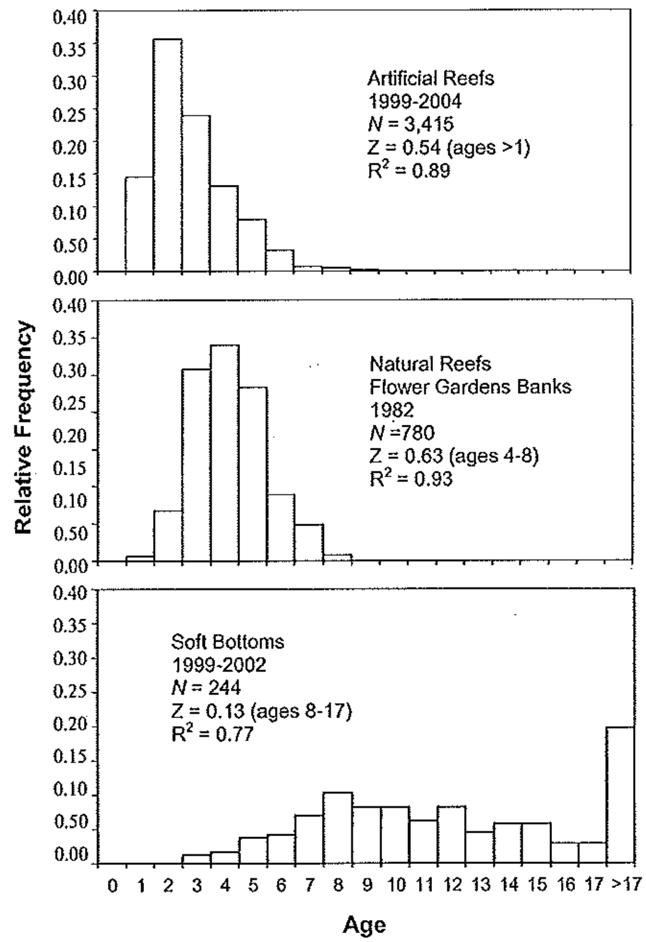


**Figure 11** Age distribution of red snapper at artificial and natural reefs and over soft bottoms. Top panel based on Szedlmayer (2007), middle panel based on Zastrow (1984), and bottom panel based on Mitchell et al. (2004).

age 3 and older, whereas fish at artificial reefs are recruited at age 2.

Collectively, we suggest that prior to the proliferation of offshore oil and gas platforms and artificial reefs (e.g., pre-1980s), young new recruits occurred over open substrates between age 0 and age 2. In this habitat, natural mortality was high due to the lack of cover affording protection from predation, and the fish were subject to shrimp trawl bycatch as well (see Figure 9). Age 2 fish were commonly taken in shrimp trawls along with age 0 and age 1 fish until about 1990, which demonstrated their abundance on open habitats (Goodyear, 1995). After this stage, natural reefs in the northern Gulf would then harbor red snapper age 3 and greater (see Figure 9). We suggest that recruitment of the age 0–2 fish to the natural reefs was inhibited by the presence of adult or larger fish occupying the reefs. After age 8, red snapper would increase their foraging range to include open soft-bottom habitat because they had reached a size that reduced predation mortality.

Not surprisingly, the construction history of oil and natural gas platforms as well as other artificial reefs has corresponded to changes in habitat distribution patterns for red snapper. In 1960, there were only about 351 offshore oil and gas platforms in the northern Gulf, but these increased to 1,520 by 1970, and reached 2,540 by 1980 (Figure 12). From 1990 to the present, the number of platforms has averaged about 4,000, considering both new installations as well as removals. Catch-per-unit effort of commercial-sized red snapper in shrimp trawls (mostly age 2) fluctuated at a level of about 3 kg/1,000 nominal days fished from 1967 to 1974, after which a decline occurred through 1989 when CPUE reached a low of 0.13 kg (Figure 12). This period of decline in abundance corresponded to the increase in platforms to present-day levels. No landings were reported after 1989 because changes in fishing regulations prohibited the sale of red

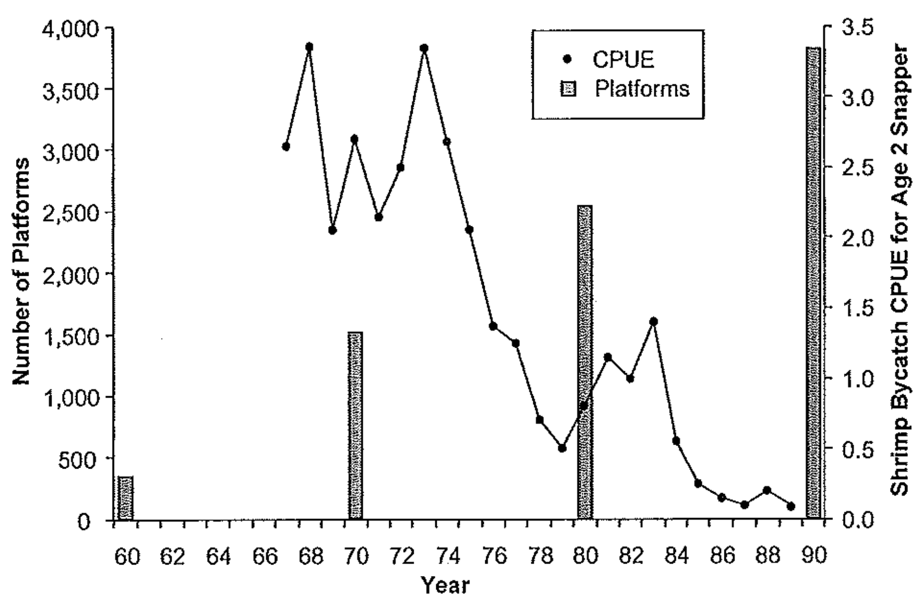


**Figure 12** Catch-per-unit effort for age 2 red snapper in shrimp trawls, 1967–1989 (Goodyear, 1995), and cumulative increase of offshore oil and gas platforms in the northern Gulf of Mexico (data provided by the Minerals Management Service, New Orleans, LA).

snapper caught by shrimp trawls (Goodyear, 1995). We suggest that this increased construction of oil and gas platforms as well as other artificial habitats has provided new protective habitat for age 2 fish that would have otherwise suffered higher mortality over open habitats. Although fishing mortality can be high at these new habitats (Nieland and Wilson, 2003), we suggest that prior to their construction mortality was even higher for age 2 fish over open habitat. This being the case, we suggest that removal of production platforms and other artificial reefs will likely result in a large reduction of red snapper available to the directed fisheries.

Cordue (2005) recommended that future red snapper stock assessments should model post-recruitment density-dependent mortality, "as this is critical for determining the impact of shrimp trawl bycatch on red snapper rebuilding." We concur and have demonstrated that the information in the existing literature is consistent with the premise of density-dependent natural mortality in red snapper for at least age 0 and age 1 fish, and likely for older fish as well. If this aspect is incorporated in the assessment models, management advice may be substantially altered.

## *ACKNOWLEDGEMENTS*

This article was enabled by funding from the Minerals Management Service (Contract 1435–01–05–39082) to VERSAR, Inc. This project provided for a literature search and data synthesis of biological information for use in management decisions concerning decommissioning of offshore oil and gas structures in the Gulf of Mexico. We especially thank Ed Weber and Jon Vølstad of VERSAR, Inc., for their support on this project. This is a contribution of the Department of Fisheries and Allied Aquacultures, Auburn University, and the Alabama Agricultural Experiment Station.

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# Site Fidelity, Movement, and Growth of Red Snapper: Implications for Artificial Reef Management

Article (PDF Available) · December 2006 with 185 Reads

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**Abstract**

Red snapper, Lutjanus campechanus, (n = 4,317) were captured and tagged at 14 experimental artificial reefs of two designs during quarterly research cruises (n = 17) off coastal Alabama between January 1999 and October 2002. Six-hundred and twenty nine recaptures were reported, representing 578 tagged red snapper. Sixty-five percent of recaptures (n = 412) were made at the site of release on subsequent research cruises, while 217 recaptures were reported by fishers. Eighty-six percent of individu-als with known recapture locations moved 2 km or less from the site of release; mean and maximum distances moved were 2.1 km and 201 km, respectively. Nine red snap-per moved greater than 80 km. Mean dispersion rate from release sites was 8.6 m d −1 . Annual site fidelity of tagged fish was estimated using nonlinear decay models. Estimated annual site fidelity ranged from 48% to 52% year −1 and was not significantly affected by artificial reef design, reef fish biomass at the site of release, or artificial reef densities surrounding each tagging site. Growth rates were estimated by regressing the change in red snapper total length versus the days a fish was at liberty. Mean growth rate for all recaptured fish was 0.206 mm d −1 . Growth rates were significantly affected by reef size (faster at larger experimental reefs) and reef fish biomass (slower at tagging sites supporting low reef fish biomass), but were not affected by artificial reef density. Moderate site fidelity and low dispersion rates during our study provide support for the hypothesis that artificial reefs off Alabama are suitable habitat for adult red snap-per. However, characteristics of artificial reefs, such as reef size and standing stock biomass, may affect red snapper growth. Furthermore, ratios of instantaneous growth in weight to total mortality (G/Z) suggest artificial reefs off Alabama serve as net sinks (i.e., G/Z < 1) of red snapper biomass at current fishing mortality rates.

# Site Fidelity, Movement, and Growth of Red Snapper: Implications for Artificial Reef Management

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*Abstract.*—Red snapper, *Lutjanus campechanus*, ($n = 4,317$) were captured and tagged at 14 experimental artificial reefs of two designs during quarterly research cruises ($n = 17$) off coastal Alabama between January 1999 and October 2002. Six-hundred and twenty nine recaptures were reported, representing 578 tagged red snapper. Sixty-five percent of recaptures ($n = 412$) were made at the site of release on subsequent research cruises, while 217 recaptures were reported by fishers. Eighty-six percent of individuals with known recapture locations moved 2 km or less from the site of release; mean and maximum distances moved were 2.1 km and 201 km, respectively. Nine red snapper moved greater than 80 km. Mean dispersion rate from release sites was 8.6 m $d^{-1}$. Annual site fidelity of tagged fish was estimated using nonlinear decay models. Estimated annual site fidelity ranged from 48% to 52% $year^{1}$ and was not significantly affected by artificial reef design, reef fish biomass at the site of release, or artificial reef densities surrounding each tagging site. Growth rates were estimated by regressing the change in red snapper total length versus the days a fish was at liberty. Mean growth rate for all recaptured fish was 0.206 mm $d^{-1}$. Growth rates were significantly affected by reef size (faster at larger experimental reefs) and reef fish biomass (slower at tagging sites supporting low reef fish biomass), but were not affected by artificial reef density.

Moderate site fidelity and low dispersion rates during our study provide support for the hypothesis that artificial reefs off Alabama are suitable habitat for adult red snapper. However, characteristics of artificial reefs, such as reef size and standing stock biomass, may affect red snapper growth. Furthermore, ratios of instantaneous growth in weight to total mortality ($G/Z$) suggest artificial reefs off Alabama serve as net sinks (i.e., $G/Z < 1$) of red snapper biomass at current fishing mortality rates.

They have No Low Relief component to Grow Babies

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## Introduction

Tagging studies are used both to assess fish migration and movement and to estimate fish growth, mortality, and abundance (Hilborn et al. 1990). In artificial reef research, tagging studies often are used to assess experimental design assumptions (i.e., independence), homing, and movement of reef fishes (Hixon and Beets 1989, 1993; Beets and Hixon 1994; Eggleston et al. 1997; Watterson et al. 1998; Patterson and Cowan 2003). Tag-recapture studies also are used to estimate site fidelity of reef fishes at artificial and natural reefs (Lindberg and Loftin 1998; Szedlmayer 1997; Patterson and Cowan 2003; Szedlmayer and Schroepfer 2005; Schroepfer and Szedlmayer 2006). Site fidelity provides an annual estimate of reef fish immigration or emigration from an artificial reef. Estimates of site fidelity, distance moved, and reef fish growth rates obtained from tagging studies all can be used to make inferences about the resource value of a particular habitat (in this case an artificial reef) or complex of habitats (Lindberg et al. 1990).

It has been hypothesized that site fidelity of reef-associated organisms is dependent on both prey availability and the availability of suitable refuge (resource mosaic hypothesis: Lindberg et al. 1990; Frazer and Lindberg 1994; density-dependent habitat selection: see Lindberg et al. 2006). Reef-associated fish species that rely on benthic prey as a primary component of their diet, such as young-adult red snapper *Lutjanus campechanus*, create a gradient of prey depletion (i.e., feeding halo) around artificial reef structures (Frazer and Lindberg 1994; Lindberg 1996; Bortone et al. 1998) resulting in negative feedbacks to reef fish energetics, residence times, and local abundance, especially if the feeding halos of closely spaced reefs overlap (Lindberg et al. 2006). As a result, the degree of prey depletion and associated negative feedbacks alters the potential for sustained productivity of an artificial reef and artificial reef complexes. It is theorized that bioenergetic demands in- greater abundance of prey (optimal foraging theory, Charnov 1976).

Artificial reefs or artificial reef complexes that sustain prey resources over time may potentially benefit reef fishes and fishery productivity more by reducing the energetic costs of foraging, increasing growth rates, and increasing site fidelity. While past research has demonstrated reef fish abundance increases both with increasing reef size (see review by Pickering and Whitmarsh 1997) and with spacing (Schroeder 1987; Frazer and Lindberg 1994; Lindberg et al. 2006), the size and spacing of artificial reefs can alter growth rates, site fidelity, and population dynamics of reef fishes (Lindberg 1996; Lindberg and Loftin 1998; Lindberg et al. 2006). Although larger, more widely dispersed reefs may hold greater benefit to fishers (increased catch rates), smaller, more isolated reefs may serve to better benefit marine resources through increased growth rates. In theory, this occurs through reductions in competition and bioenergetic demands at more widely spaced reefs provided that mortality rates do not change as a function of spacing.

In the current study, information obtained from a mark–recapture study was used to estimate site fidelity, movement, growth, and productivity of red snapper at artificial reefs off coastal Alabama. Movement and growth parameters were evaluated in relation to the distribution, abundance, and demographic characteristics of artificial reefs. We first evaluated site fidelity, movement, and growth of all tagged fish captured during our study. We then examined whether habitat characteristics (e.g., density of artificial reefs, reef design/size, and biomass of reef fish residing at tagging sites) affected site fidelity and growth rates of red snapper. Finally, we compared instantaneous rates of growth in weight to total mortality estimates for red snapper from the eastern Gulf of Mexico (SEDAR 2005). We hypothesized red snapper residing at smaller reefs, surrounded by lower densities of artificial reefs, would have higher site fidelity and growth rates than red snapper residing at larger reefs, sur-

**Item No. 8**

# CITY OF SOUTH PADRE ISLAND
# ADVISORY BOARD MEETING
# AGENDA REQUEST FORM

**MEETING DATE:** September 28, 2016

**NAME & TITLE:** Keith Arnold, CVB Director

**DEPARTMENT:** South Padre Island Convention & Visitors Bureau

## ITEM

Presentation and possible discussion concerning the CVB Director's Summary Report.

a. Departmental Updates
   *Administrative Updates
   *Group Sales Updates
   * Financial Updates
   *Communication Updates
   *The Atkins Group Report

## ITEM BACKGROUND

More information concerning this agenda item will be provided at the meeting.

## BUDGET/FINANCIAL SUMMARY

## COMPREHENSIVE PLAN GOAL

## LEGAL REVIEW

| | | |
|---|---|---|
| Sent to Legal: | YES: ____________ | NO: ____________ |
| Approved by Legal: | YES: ____________ | NO: ____________ |

Comments:

## RECOMMENDATIONS/COMMENTS

# CONVENTION & VISITORS BUREAU REPORT

## AUGUST 2016

## ADMINISTRATION

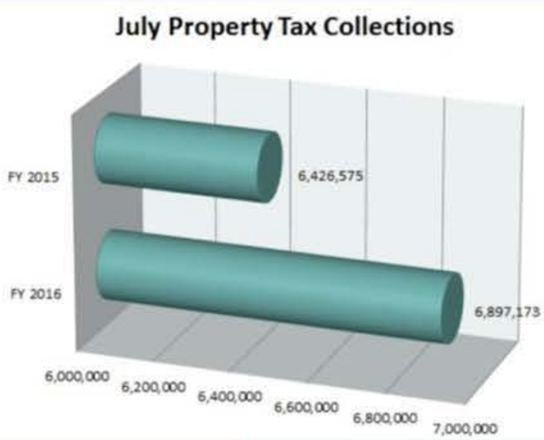
- Met with Darla Jones, Interim City Manager and the South Padre Island Board of Realtors regarding the HOT Fund collections and terms.
- Met with Darla Jones, Interim City Manager regarding the Time Warner Cable Company final contract for managing the WIFI. The contract was enacted on August 16.
- Met with CVB Staff regarding plans for the upcoming Christmas and Holiday Events.
- Interviewed candidates for the Media Relations position.
- Participated in a meeting concerning the Venue Tax with Georgina Ramos, Hotel Occupancy Tax Analyst and other staff members.
- Met with Joey Rodriguez, Operations Manager and Rocky Poovey from SpawGlass for the 1 year warranty inspection of the Convention Centre.
- Conducted a meeting with participants of the MIndecology program.
- Worked with The Atkins Group on the content for the CVA Board Meeting marketing presentation.
- Attended several meetings with the South Padre Island Wahoo Classic organizers for the September fishing tournament.
- Prepared and gave the CVB Marketing update during the quarterly POWC meeting that was hosted at the Convention Centre.
- Met with The Atkins Group in San Antonio for the 2017 media and marketing planning.

# FINANCE

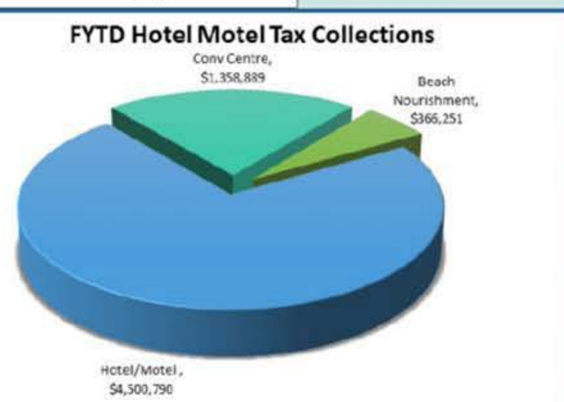
**SALES TAX COLLECTIONS**

| SALES TAX MONTH | REPORTED TO THE STATE | COLLECTED BY SPI | FY 2016 TOTAL | FY 2016 G.F. | FY 2016 EDC | FY 2015 TOTAL | INCREASE (DECREASE) |
|---|---|---|---|---|---|---|---|
| SEPT | OCT | NOV | 259,808.73 | 194,856.55 | 64,952.18 | 231,041.94 | 28,766.79 |
| OCT | NOV | DEC | 161,032.82 | 120,774.62 | 40,258.21 | 167,179.45 | (6,146.63) |
| NOV | DEC | JAN | 130,352.25 | 97,764.19 | 32,588.06 | 137,594.81 | (7,242.56) |
| DEC | JAN | FEB | 170,487.88 | 127,865.91 | 42,621.97 | 167,829.70 | 2,658.18 |
| JAN | FEB | MAR | 148,763.45 | 111,572.59 | 37,190.86 | 147,033.17 | 1,730.28 |
| FEB | MAR | APR | 183,245.57 | 137,434.18 | 45,811.39 | 168,939.00 | 14,306.57 |
| MAR | APR | MAY | 311,867.31 | 233,900.48 | 77,966.83 | 346,947.92 | (35,080.61) |
| APR | MAY | JUN | 213,304.53 | 159,978.40 | 53,326.13 | 241,479.26 | (28,174.73) |
| MAY | JUN | JUL | 262,340.72 | 196,755.54 | 65,585.18 | 260,265.05 | 2,075.67 |
| JUN | JUL | AUG | 438,458.80 | 328,844.10 | 109,614.70 | 426,571.67 | 11,887.13 |
| JUL | AUG | SEPT | | 0.00 | 0.00 | 471,195.74 | (471,195.74) |
| AUG | SEPT | OCT | | 0.00 | 0.00 | 359,029.16 | (359,029.16) |
| TOTAL | | | 2,279,662.06 | 1,709,746.55 | 569,915.52 | 3,125,106.87 | (845,444.81) |
| BUDGET AMOUNT | | | 3,101,198.00 | 2,331,198.00 | 770,000.00 | 3,028,021.00 | 73,177.00 |

## Property tax collections




Property tax revenue is used for General Fund expenditures, TIRZ allocations as well as for long term debt payments (Debt Service Fund)




## Local Hotel Motel Tax

Hotel Motel tax collections are used for tourism, advertising and promotion (accounted for in the Hotel Motel Fund); Convention Centre operations (Convention Centre Fund) and nourishment efforts on the beach (Beach Nourishment Fund).

FYTD collections increased by $268,177 compared to fiscal year 2014-2015 (includes Hotel Motel and Convention Centre Funds only)

## Hot Tax

- **HOT Tax Registrations and Renewals for the month of August 2016:**
  - **Registrations: 8**
  - **Renewals: 200**
- **Short Term Rental registrations as of January 1, 2016:**
  - **Registrations: 110**
  - **Renewals: 1,452**

## MARKETING

- Provided social promotion of material featuring South Padre Island by publications including: A Dangerous Business Blog, Expedia.com, Texas Monthly, The Monitor, Valley Morning Star, and Wide Open Country.
- Provided social promotion for several special events including: TXGLO's Adopt –A-Beach Fall Cleanup, the Bully Beach Expo, El Paseo Arts Production of WIT, Labor Day Weekend Fir works and events, the Open Water Festival, Sandcastle Days, the TGSA SPI Open, the SPI Triathlon, the SPI Wahoo Classic, and the Winter Outdoor Wildlife Expo.
- Organized Social FAM trip, in conjunction with Texas Tourism and Edelman, to host travel bloggers Amanda Williams from "A Dangerous Business", Craig Zabransky from "Stay Adventurous", and Edelman Assistant Account Executive-Digital McKenzie Layne from August 26-30 so they would have to opportunity to enjoy activities and meals across the island in order to gather content and images for both social and blog postings about South Padre Island.
- Assisted The Atkins Group in the gathering and approving of content and images for the South Padre Island TripAdvisor page.
- Created artwork for the upcoming Christmas Parade event page.
- Worked with TIFT Executive Board Member Rebecca Galvan and CVB Business Development Director Michael Flores to stream a Facebook Live interview regarding TIFT, TIFT Cares, and encouraging last minute registrations for the tournament.



Expedia TexasMonthly

## VISITORS CENTER

- For the month of August the South Padre Island Visitors Center staff serviced 442 Phone Inquiries and 3,502 Visitor Walk-Ins.

## CONVENTION CENTRE ACTIVITIES & EVENTS

- August 3-7 – Texas International Fishing Tournament
- August 8-10 – 2016 Jems Youth Festival
- August 12-14 – Ladies Kingfish Tournament
- August 18-20 – 2016 API Annual Fishing Tournament
- August 20 – South Texas Association Radiology STAR Training
- August 27 – Bully Beach Expo 2016

## MEETINGS AND CONVENTIONS

- Business turned definite in August: 8 groups, 1,065 room nights
- Leads sent in August: 10 groups, 3,794 room nights
- Current tentative groups: 9 groups
- Leads sent in room nights:
  - o FY 2015: 37,107
  - o FY 2016: 41,697
- Business turned definite in room nights:
  - o FY 2015: 37,393
  - o FY 2016: 38,778





## AUGUST SALES ACTIVITY RECAP

- **Attended Destination Marketing Association International, Annual Convention in Minneapolis, MN**
- **Attended Criminal Investigation Technology Conference, Austin, TX**
- **Austin Association Sales Calls:**
    - o TX Assoc. of Life & Health Insurers
    - o TX Assoc. of Business & Chambers of Commerce
    - o TX Assoc. of Health Plans
    - o CMP Management
    - o TX Optometric Association
    - o Texas Amateur Athletic Federation
    - o Association of Texas Appraisers
- **Student Youth Travel Association Annual Tradeshow**
    - o Met with over 40 travel and tour operators specializing in student, specialty and performance groups

Destination Marketing Association International
100 YEARS OF ADVANCING DESTINATIONS

SYTA
The Voice of Student & Youth Travel®

CMP MANAGEMENT

## SPECIAL EVENTS ACTIVITY REPORT

- **Tickets are now on sale for the Dec. 3rd SPI Lantern Festival!**
    - o Early Bird-$25.00
    - o Regular-$30.00
    - o Late Registration-$35.00
    - o Last Call-$45.00
    - o Day of Registration-$50.00
- **The December 2nd & 3rd weekend will also include:**
    - o SPI Holiday Market Place (65 vendors), live music and concessions
    - o SPI City Tree Lighting Ceremony with concert series
    - o Holiday displays from: Port Isabel, Laguna Vista, Los Fresnos and Bayview
- **Open Water Festival will take place along side the Gran Fondo bike race**
- **SPI CVB will set up a full promo booth in C.C. for Bikefest on 7/8 October**

Budweiser SOUTH PADRE ISLAND BIKEFEST "ROAR BY THE SHORE"

South Padre Island OpenWater FESTIVAL

the atkins group

# SPI August Quick Hits
## *September 28, 2016*

***Overview***

During the month of August the marketing plan made a strong push for the Nature Tourism segment, increasing our media spend and creative initiatives. Both print and digital channels were put into affect with the goal of appealing to our fall and winter travelers. A collegiate Spring Break push also began this month and has garnered great success so far. The ad click through rate has been extremely strong with a low cost per click of $1.10. The average travel destination client of The Atkins Groups cost per click is $4.

The Island received several added value features through the agencies PR efforts. Texas Monthly included South Padre Island in their “Something in the Way They Move” story. Wide Open Country Magazine named SPI a “Labor Day Trip you Should Consider” and Turtle Inc. and the turtle release was recognized in the Rivard Report.

Even during our shoulder season, sopadre.com continues to show strong performance. Site visits each month continue to be above the hundreds of thousands. Our social campaign success is the largest driver to the site, with over 50% of traffic coming for social channels. And mobile still reigns as the device of choice at 76% of users visiting sopadre.com from their mobile phones.

**Texas Monthly featured the island in their “Something in the Way They Move” story.**

**sopadre.com had almost half a million unique page views in the month of August**

**SPI’s Nature Tourism campaign launched in August with both digital and print initiatives**

**Spring Break campaign is seeing very strong performance. During the first 10 days, more than 5,000 students were sent to the campaign landing page.**

**Social continues to be the largest traffic driver to sopadre.com at 50.9%**

**Wide open country names SPI as “A Labor Day Trip you Should Consider”**

**Mobile usage of our site is at an all time high, at 76%**

**Family Leisure SEM campaign is maintaining an efficient CPC of $2**

# TAG Marketing Report – August 2016

## MEDIA OVERVIEW

Interim creative campaign efforts continue to target seasonal opportunities and demographics while providing added-value insertions and earned media that is cost-effective and provides maximum exposure.

**Family Leisure – Texas including RGV**
- SEM
- PPC Campaign
- Paid Social
- Display (all platforms)
- Weatherbug
- Travel Guides Free
- Texas State Travel Guide (May – September)
- Texas Highways Events Calendar (May – August)
- Texas Monthly (September)
- Texas Parks and Wildlife Outdoor Annual
- TourTexas.com (April – September)
- Southern Living (September)
- See Texas First (July & September)

**Midwest/Canada**
- SEM
- PPC Campaign
- Paid Social
- Display (all platforms)
- Canadian Traveler E-Blasts (April – September)

**RGV/Weekenders**
- :30 Family Leisure TV Spot (English) Time Warner Cable/RGV (December – September)
- :30 Family Leisure TV Spot (Spanish) Time Warner Cable/RGV (April-June)
- :30 Family Leisure Radio Spot (English) KVLU, KBFM, KGBT (April-June)

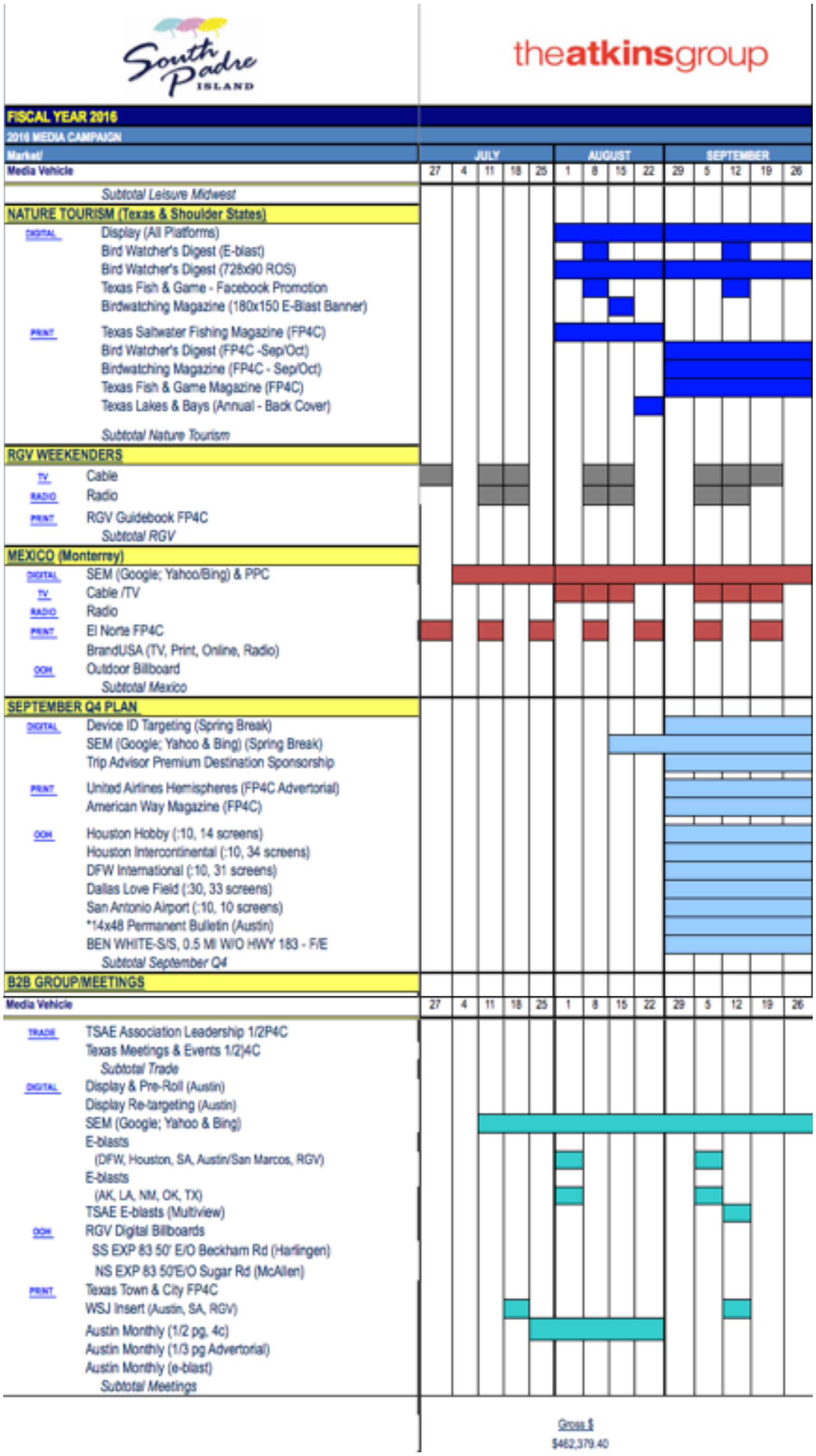
**Mexico/Monterrey**
- SEM
- PPC Campaign
- Cable (May – September)
  El Norte (January – September)

**Groups/Meetings**
- SEM
- eBlast (regional & national)
- TSAE E-blasts (September)
- OOH – Harlingen & McAllen (February – May)
- WSJ Insert (July & September)
- Austin Monthly (July and August)

**September Q4 Initiatives**
- Device ID Targeting (Spring Break)
- SEM (Spring Break)
- TripAdvisor Partnership ad units
- United Airlines Hemispheres (FP4C)
- American Way Magazine (FP4C)
- Austin Airport OOH
- Houston Hobby (:10 34 screens)
- Houston Intercontinental (:10, 34 screens)
- DFW International (:10, 34 screen)
- Dallas Love Field (:10, 31 screens)
- San Antonio Airport (:10, 10 screens)

theatkinsgroup

## MEDIA FLOWCHART – Q4



South Padre ISLAND the atkins group

## CREATIVE EXAMPLE: BIRD WATCHING MAGAZINE (AUGUST)


16-SPI-1124 BirdWatching Magazine_Final.indd 1 7/27/16 11:29 AM

## CREATIVE EXAMPLE: TEXAS FISH AND GAME MAGAZINE (AUGUST)


16-SPI-1119 TX Fish and Game Sept Ad Final.indd 1 7/25/16 3:34 PM

## GOOGLE ANALTYICS OVERVIEW AUGUST 1-31 2016

**Visits**

**179,712**

% of Total: 100.00% (179,712)

**Unique Visitors**

**114,630**

% of Total: 100.00% (114,630)

**Avg. Visit Duration**

**00:01:44**

Avg for View: 00:01:44 (0.00%)

**% New Visits**

**63.79%**

Avg for View: 63.79% (0.00%)

## PAGE VIEWS/PAGES PER VISIT

**Pageviews and Unique Pageviews by Page**

**472,272**

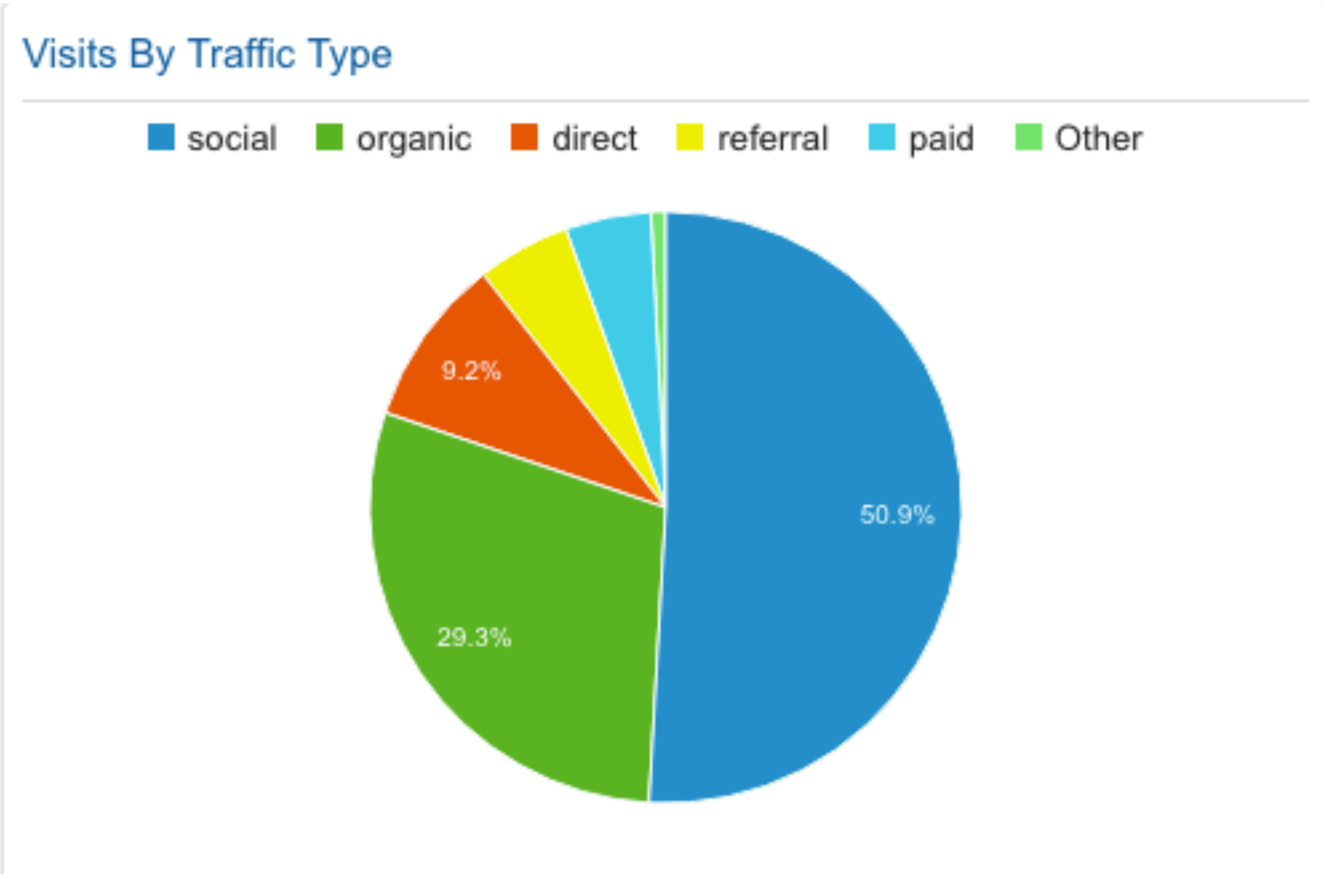
% of Total: 100.00% (472,272)

**Pages / Visit**

**2.63**

Avg for View: 2.63 (0.00%)

# VISITS BY TRAFFIC TYPE




# DEVICE TYPE

| | | | | |
|---|---|---|---|---|
| 1. | mobile | 136,253 | 75.82% |
| 2. | desktop | 32,290 | 17.97% |
| 3. | tablet | 11,169 | 6.21% |

## HIGHEST-RANKING VISITS BY COUNTRY

### Visits and Avg. Visit Duration by Country / Territory

| Country | Sessions | Avg. Session Duration |
|---|---|---|
| United States | 106,150 | 00:02:22 |
| Mexico | 65,666 | 00:00:49 |
| Canada | 5,034 | 00:00:56 |
| India | 785 | 00:00:47 |
| United Kingdom | 419 | 00:01:10 |
| Germany | 115 | 00:02:11 |
| Spain | 84 | 00:00:37 |
| Australia | 60 | 00:00:41 |
| France | 53 | 00:01:58 |
| Italy | 53 | 00:01:09 |

## HIGHEST-RANKING STATE VISITS

Visits and Pages / Visit by RegionNew Widget

| Region | Sessions | Pages / Session |
|---|---|---|
| Texas | 67,834 | 3.32 |
| Illinois | 3,548 | 2.86 |
| California | 2,851 | 2.65 |
| New York | 2,256 | 2.28 |
| Michigan | 1,688 | 2.78 |
| Georgia | 1,528 | 2.22 |
| Missouri | 1,455 | 3.35 |
| Oklahoma | 1,453 | 4.16 |
| North Carolina | 1,345 | 2.07 |
| Minnesota | 1,344 | 3.83 |

## HIGHEST-RANKING TEXAS CITY VISITS

| City | Sessions | Page/Sessions |
|---|---|---|
| **Houston** | 14,779 | 3.11 |
| **DFW Area** | 12,808 | 4.7 |
| **San Antonio** | 7,095 | 3.30 |
| **Austin** | 6,072 | 3.38 |
| **South Padre Island** | 3,387 | 3.56 |
| **Brownsville** | 1,538 | 2.87 |
| **McAllen** | 1,307 | 3.22 |
| **Harlingen** | 848 | 2.84 |
| **Corpus Christi** | 662 | 3.51 |

## PUBLIC RELATIONS UPDATE

**Meetings and Planning**

- Conducted internal PR team meetings to plan for weeks / months ahead; updated pitch calendar on an ongoing basis.
- Monitored Google and Meltwater alerts; shared coverage as appropriate.
- Developed Midwestern travel editors and writers media list in Cision.
- Updated and expanded Texas travel editors and writers media list in Cision.
- Began researching media outlets for the fall activities pitch distribution.

**Materials**

- Finalized fall events news release and secured client approval.
- Finalized birding news release and secured client approval.
- Finalized Labor Day news release and secured client approval.
- Crafted pitch for fall events.
- Crafted pitch for birding.
- Crafted pitch for Labor Day events.
- Crafted pitch for Labor Day fireworks events.

**Media Pitching**

- Pitched fall events and birding news release to Texas travel writers, Texas travel bloggers, Midwestern travel editors and writers lists.
- Pitched Labor Day events and family-friendly activities Texas travel writers, Texas travel bloggers, Midwestern travel editors and writers lists.
- Pitched Labor Day fireworks / photos to Texas travel pubs and major metro dailies in Dallas, Austin, San Antonio and Houston.
- Pitched WOAI-AM and Texas Public Radio re:
- Followed up with Marika Flatt, travel editor of Texas Lifestyle Magazine regarding her Weekend Travel Tip segment being featured on TPR's The Texas Tribune.
- Offered family 4-pack of tickets to the RGV Fishing and Hunting Expo to Roger Soto Associate Producer of Great Day SA (CBS-San Antonio) for on-air giveaway.

**Miscellaneous**

- Submitted Winter CVB-sanctioned events to Texas Highways.com, TravelTex.com, and AllAcrossTexas.com.
- Scheduled / helped lead two demos for new measurement and monitoring tools – BurrellesLuce and Cision.
- Conducted meetings with client to evaluation and discuss pros / cons of each tool; worked with vendors to finalize contracts for client review and approval.

**Results**

*Texas Monthly,* "Something in the Way They Move": http://www.texasmonthly.com/articles/something-way-move/

*The Rivard Report*, "79 baby Sea Turtles Released at Padre Island National Seashore": http://therivardreport.com/watch-79-baby-sea-turtles-released-at-padre-island-national-seashore/

*Wide Open Country*, "5 Last-Minute Labor Day Trips You Should Consider": http://www.wideopencountry.com/last-minute-texas-labor-day-trips-consider-taking/

*Baby Making Machine (Blog),* "A Trip to the Texas Coast: Our South Padre Family Vacation": http://www.babymakingmachine.com/2016/08/texas-coast-south-padre-family-vacation.html

*KENS-5* (CBS, San Antonio), "Rescued sea turtles released on South Padre Island," by Jose Sanchez, Aug. 2, 2016.
http://www.kens5.com/news/local/animals/watch-rescued-sea-turtles-released-on-south-padre-island/286348451

*The Active Times,* "The Best Beaches for Labor Day," by Nicole Dossantos, Aug. 31, 2016.
http://www.theactivetimes.com/travel/us/best-beaches-labor-day

*The Texas Standard,* "South Padre Island Boasts Tropical Fun for Any Budget," by Marika Flatt, Sept. 1, 2016.
http://www.texasstandard.org/stories/south-padre-island-boasts-tropical-fun-for-any-budget/

# Something in the Way They Move

MILLIONS OF CREATURES MIGRATE TO, FROM, AND THROUGH TEXAS EVERY YEAR. HERE ARE A FEW NOT TO MISS.

**AUGUST 2016** | *by* **DAN OKO** | **0 COMMENTS**

Texas, it has long been said, is a crossroads—of peoples and cultures, of course, but also of geographies. The state's sheer breadth, from the hulking mountains of West Texas to the grassy plains of the Panhandle to the swamps of the Big Thicket, means that it encompasses almost every kind of landform and habitat in the Western Hemisphere. And with that comes a grand diversity not only of flora and fauna but also of movement—comings and goings, meetings and partings, as seeds and birds and animals are carried upon our winds, ushered along our waters, and sustained by our soil.

These currents of movement are especially majestic during late summer and fall, when members of the animal kingdom swing into and across Texas on seasonal migrations. As the last of their young are born, as they band together to nest and rest, as they journey in preparation for winter, these hundreds—or thousands, or millions—of creatures offer a lavish display of life that is worth seeing, and admiring, up close. So make plans now: pull out the calendar, grab some binoculars, and set out in search of nature's pilgrims, whose beauty and patterns will awaken a sense of ancient memory. "The lives of many animals are constrained by the schemes of men," writes naturalist Barry Lopez in his classic, *Arctic Dreams,* "but the determination in these lives, their traditional pattern of movement, are a calming reminder of a more fundamental order." Let the following guide be your starting point.

## Sandhill Cranes

Cranes, says the great birding outfitter Victor Emanuel, are an enduring symbol of wilderness around the globe. He should know: after forty years of leading birding trips worldwide, the

## Wide Open Country

# WATCH: 79 Baby Sea Turtles Released at Padre Island National Seashore

Camille Garcia
on 20 August, 2016 at 00:04

Starting at about 6:45 a.m. Wednesday, 79 recently-hatched Kemp's Ridley turtles flopped and scurried their way across the wet sand on the Padre Island National Seashore into the Gulf of Mexico – like millions have done before them – as more than 500 adults and children watched behind a tape barrier nearby. It was the last public Kemp's Ridley turtle release at the Padre Island National Seashore this breeding season.

But it's not an easy feat for the most endangered sea turtles in the world. In fact, from the moment a mature Kemp's Ridley nester's eggs are laid, their fate is rather uncertain due to multiple threats – both natural and unnatural – that have kept so many unprotected eggs from hatching. Driving on the beach**, high tides, and natural predators such as birds all pose dangers to the animals before and after they're born, when they're making their treacherous journey into the sea.**

With their incubation and rehabilitation facility, National Park Service biologists at the Padre Island National Seashore are working to ensure that more and more Kemp's Ridleys live to see the sunlight and flop their fins into the ocean where they belong.

Since the area is the primary nesting ground for that species of sea turtle, the biologists locate hundreds of clutches, or egg batches, each season. This year, biologists identified 186 Kemp's Ridley nests in Texas, 89 of which were found on the Padre Island National Seashore. Each clutch can contain just under or above 100 eggs. Other sea turtle species nest in the area, too, including Loggerhead and Green turtles, but their nests are not nearly as numerous as those of Kemp's Ridleys.

Once the nests are found, the biologists transfer the eggs to their incubators, and – when they're ready – release the hatchlings back into the Gulf.

Cynthia Rubio, Padre Island National Seashore biologist, estimates that the work of her and her colleagues increases the rate of Kemp's Ridleys reaching adulthood.

"If they were left on the beach unprotected, their survival rate would be very low," Rubio told the *Rivard Report* Wednesday after the release. "**We protect them as they go into water, but once they're in the water they're on their own."**

The turtles are released mid-beach and are able to safely make it to the water with the help of a protective net overhead to keep birds away and the sun or moon light on the ocean to guide them. The average amount of time it takes for a newborn Kemp's Ridley to waddle its way into the waves is anywhere from 45 minutes to one hour, Rubio said. Each public turtle release that the facility hosts, she added, draws large groups of people who come to bear witness to the unique – and very cute – occurrence. Every group also has the opportunity to learn more about the turtles and how the Padre Island National Seashore biologists work to preserve the endangered creatures.

Marine biologists at the Animal Rehabilitation Keep, operated by the University of Texas at Austin Marine Science Institute, also help protect the turtles, along with marine birds, by caring for sick or injured animals found nearby in the

# August 2016 Insights:

### Spring Break

- The Spring Break PPC campaign launched on 8/20
- CTR has been extremely strong at over 2% with a low CPC of $1.10
- In 10 days, more than 5,000 students were sent to the campaign landing page

### Family Leisure

- 71% of all search term clicks came from the state of Texas compared to 29% Midwestern states. This is similar to the previous months in 2016.
- The top performing search term was "things to do in South Padre Island"
- Mobile was preferred device for all social campaigns
- Texas and Midwestern regions generated similar social CPCs falling at $.15.
- The Family Leisure Mexico Facebook campaign remains the strongest performing campaign at a 3.4% CTR and $.01 CPC.
- Through the retargeting campaign, over 717K impressions were served to people who visited the Family Leisure landing page.
- 282 email leads were captured through Unbounce to date

### Nature Tourism

- Similar to the Family Leisure campaign, 70% of all search term clicks came from the state of Texas compared to 30% Midwestern states
- "Fishing" and "Birdwatching" were the top two keywords for all Nature Tourism search campaigns
- The average CPC in in the midwestern states lowered from $5 to $3.97 in the month of August
- Cananda the top region for the Nature Tourism Midwestern audience outside of Texas
- 54 email leads were captured through Unbounce to date

### Groups and Meetings

- With over 75K impressions served, the Groups and Meetings SEM campaign drove 250 ad clicks
- The average CPC for August was $6.81 which is lower than the G&M meeting average of $10 and previous G&M campaigns
- 14 leads were generated from the Unbounce landing page

**Average travel destination TAG client CPC is $4*

## AdRoll Retargeting

| | Cost ($) | Impressions | Clicks | CTR | Average CPC ($) |
|---|---|---|---|---|---|
| **SPI Family Leisure Q4** | 2,259.00 | 717,723 | 1,386 | 0.19 | 1.63 |
| **SPI Nature Tourism Q4** | 686.93 | 263,161 | 635 | 0.24 | 1.08 |




## AdWords

| | Cost ($) | Impressions | Clicks | CTR (%) | Average CPC ($) |
|---|---|---|---|---|---|
| **Spring Break 2017** | 6,005.70 | 262,687 | 5,464 | 2.08 | 1.10 |
| **Family Leisure Q4 - TX** | 4,099.15 | 431,558 | 1,799 | 0.42 | 2.28 |
| **Family Leisure Q4 - MW** | 2,954.00 | 204,041 | 1,429 | 0.70 | 2.07 |
| **Nature Tourism Q4 - TX** | 1,756.94 | 717,238 | 544 | 0.08 | 3.23 |
| **Groups and Meetings Q4** | 1,756.32 | 75,753 | 258 | 0.34 | 6.81 |
| **Nature Tourism Q4 - MW** | 587.63 | 93,008 | 148 | 0.16 | 3.97 |

**Family Leisure and Nature Tourism Texas Targeting:**

Texas, United States (state)
(Excluding; South Padre Island, Texas)

**Family Leisure and Nature Tourism Midwest Targeting:**

Canada (country)
Colorado, United States (state)
Illinois, United States (state)
Indiana, United States (state)
Kansas, United States (state)
Kentucky, United States (state)
Michigan, United States (state)
Missouri, United States (state)
Montana, United States (state)
Nebraska, United States (state)
New Mexico, United States (state)
Ohio, United States (state)
Oklahoma, United States (state)

**Spring Break Targets:**

| | | |
|---|---|---|
| 1. Arizona State University | 1. Assumption College | 22. Lake Forest |
| 2. Baylor University | 2. Bloomberg University of Pennsylvania | 23. LaSalle University |
| 3. Bowling Green State University | 3. Boston College | 24. Le Moyne College |
| 4. Butler University | 4. Boston University | 25. Lynchburg College |
| 5. Central Michigan University-Mount Pleasant | 5. Bridgewater State University | 26. Mass College of Pharmacy Health Services |
| 6. Clark University | 6. California University of Pennsylvania | 27. Mount Ida College |
| 7. Ferris State University | 7. Carnegie Mellon University | 28. Northwestern University |
| 8. Illinois State University | 8. Clarion University of Pennsylvania | 29. Pennsylvania State University-Main Campus |
| 9. Illinois State University-Normal, IL | 9. Coastal Carolina University | 30. Rhode Island College |
| 10. Mankato State (Minnesota State University-Mankato) | 10. College of Charleston | 31. Roger Williams University |
| 11. Michigan State University | 11. College of the Holy Cross | 32. Sacred Heart University |
| 12. Missouri State University | 12. College of William and Mary | 33. St, Joseph's University |
| 13. Sam Houston State University | 13. East Carolina College | 34. Stonehill College |
| 14. Southern Methodist University | 14. Emerson College | 35. University of Central Florida |
| 15. South Dakota State University | 15. Fairfield University | 36. University of Pittsburg-Pittsburg Campus |
| 16. St. Cloud State University | 16. Florida State University | 37. University of South Carolina |
| 17. Texas Christian University | 17. George Mason University | 38. University of Vermont |
| 18. University of Minnesota-Duluth | 18. Georgetown University | 39. University of Virginia |
| 19. University of South Dakota | 19. Gordon College | 40. Vanderbilt University |
| 20. University of Texas-El Paso, TX | 20. High Poiint University | 41. Virginia Polytechnic Institute and State University |
| 21. Western Michigan University | 21. James Madison University | 42. Wentworth Institute of Technology |
| | | 43. Worchester Polytechnic Institute |

| | Campaign Name |
|---|---|
| Spring Break 2017 Deals - Visit SPI during your break<br>visit.sopadre.com<br>Spring Break 2017. Make it yours. Visit the #1 Spring Break Destination! | Spring Break 2017 |
| Spring Break 2017 Packages - Save & plan your vacation now<br>sopadre.com<br>Visit South Padre Island during Spring Break! Cheap vacation packages for all. | Spring Break 2017 |

# South Padre Island CVB

theatkinsgroup

| | Campaign Name |
|---|---|
| [Texas Family Beaches](#)<br>Family-fun Activities are closer than you think – Explore Today!<br>visit.sopadre.com | Family Leisure Q4 - TX |
| [Family Beach Activities](#)<br>Your Jet Ski, Boogie Boarding & Water Sport adventure awaits!<br>visit.sopadre.com | Family Leisure Q4 - TX |

| | Campaign Name |
|---|---|
| [Family Beach Activities - South Padre Island Texas](#)<br>visit.sopadre.com<br>Take a trip to the island for family adventures and more! | Family Leisure Q4 - MW |
| [Texas Family Resorts - South Padre Island vacations](#)<br>visit.sopadre.com<br>Endless Beaches, Dolphin Swimming & More at South Padre Island! | Family Leisure Q4 - MW |

| | Campaign Name |
|---|---|
| [Nature Tourism Beaches](#)<br>The top ecotourism destination in Texas - South Padre Island<br>visit.sopadre.com | Nature Tourism Q4 - TX |
| [Nature-Based Tourism](#)<br>Experience the best nature activities of South Padre Island!<br>visit.sopadre.com | Nature Tourism Q4 - TX |

| | Campaign Name |
|---|---|
| [Experience Nature](#)<br>Enjoy Fishing by the Bay & open water at South Padre Island!<br>visit.sopadre.com | Nature Tourism Q4 - MW |
| [Nature Tourism Beaches](#)<br>The top ecotourism destination in Texas - South Padre Island<br>visit.sopadre.com | Nature Tourism Q4 - MW |

| | Campaign Name |
|---|---|
| [Business on the Beach](#)<br>From Suit to Bathing Suit – Book tropical SPI for your next meeting.<br>visit.sopadre.com | Groups and Meetings Q4 |
| [Conference with a View](#)<br>Beach-front convention center on the tropical, South Padre Island!<br>visit.sopadre.com | Groups and Meetings Q4 |

## Facebook

| | Campaign Name | Spend ($) | Impressions | Clicks | CTR (%) | CPC (Link) ($) | Post Engagement |
|---|---|---|---|---|---|---|---|
| **Family Leisure MX Q4** | Family Leisure MX Q4 | 2,239.96 | 5,827,464 | 198,264 | 3.40 | 0.01 | 198,309 |
| **Family Leisure Q4 - TX** | Family Leisure Q4 | 3,297.80 | 859,451 | 17,986 | 2.09 | 0.19 | 17,582 |
| **Family Leisure Q4 - MW** | Family Leisure Q4 | 2,235.36 | 1,238,774 | 16,442 | 1.33 | 0.14 | 16,105 |
| **Family Q4 - MW** | Family Leisure Q4 - Instagram | 1,014.34 | 146,259 | 1,115 | 0.76 | 1.24 | 2,629 |
| **Family Q4 - TX** | Family Leisure Q4 - Instagram | 1,470.34 | 216,521 | 1,315 | 0.61 | 1.93 | 2,511 |
| **Nature Tourism Q4 - TX** | Nature Tourism Q4 | 1,039.28 | 453,852 | 6,814 | 1.50 | 0.17 | 6,396 |
| **Nature Tourism Q4 - MW** | Nature Tourism Q4 | 974.52 | 505,583 | 6,431 | 1.27 | 0.16 | 6,291 |
| **Nature Q4 - TX** | Nature Tourism Q4 - Instagram | 589.87 | 119,675 | 897 | 0.75 | 1.31 | 2,237 |
| **Nature Q4 - MW** | Nature Tourism Q4 - Instagram | 416.85 | 84,543 | 547 | 0.65 | 1.10 | 2,104 |

**Family Leisure Texas**

**Location:** United States, Texas

**Exclude Location:** South Padre Island (+25) mi Texas

**Age:** 27 - 49

**Interests:** Adventure travel, Vacations, Canoe, Kite surfing, Windsurfing, Beaches, water sports, Travel or Parasailing; Parents (01-02 years); Parents with preschoolers

**Family Leisure Midwest**

**Location:**
Canada, United States: Alabama; Colorado; Illinois; Indiana; Iowa; Kansas; Kentucky; Maine; Michigan; Minnesota; Mississippi; Missouri; Montana; Nebraska; New Mexico; New York; North Carolina; North Dakota; Ohio; Oklahoma; Pennsylvania; South Dakota; Tennessee; Vermont; Wisconsin

**Exclude Location:** United States: California; South Padre Island (+25) mi Texas

**Age:** 27 - 49

**Interests:** Adventure travel, Vacations, Canoe, Kite surfing, Windsurfing, Beaches, water sports, Travel or Parasailing; Parents (01-02 years); Parents with preschoolers

**Nature Tourism Texas**

**Location:** United States, Texas

**Exclude Location:** South Padre Island (+25) mi Texas

**Age:** 25 - 65

**Interests:** Adventure travel, Vacations, Fishing, Ecotourism, Birds, Travel + Leisure, Nature, Beaches, Horseback riding or Travel

**Nature Tourism Midwest**

**Location:**
Canada, United States: Alabama; Colorado; Illinois; Indiana; Iowa; Kansas; Kentucky; Maine; Michigan; Minnesota; Mississippi; Missouri; Montana; Nebraska; New Mexico; New York; North Carolina; North Dakota; Ohio; Oklahoma; Pennsylvania; South Dakota; Tennessee; Vermont; Wisconsin

**Exclude Location:** United States: California; South Padre Island (+25) mi Texas

**Age:** 25 - 65

**Interests:** Adventure travel, Vacations, Fishing, Ecotourism, Birds, Travel + Leisure, Nature, Beaches, Horseback riding or Travel

# South Padre Island CVB

theatkinsgroup

**Campaign Name**

Family Leisure Q4

Visit South Padre Island
Sponsored

Like Page

Explore South Padre Island on your own terms, in your own way.


Just You & Your Canoe

Visit us to learn more about South Padre Island activities & events, request lodging..

VISIT.SOPADRE.COM

Learn More

120 Reactions 2 Comments 10 Shares

**Campaign Name**

Nature Tourism Q4

Visit South Padre Island
Sponsored

Like Page

Experience nature at its best with dolphins, sea turtles & more!


Smile With The Dolphins

Visit us to learn more about South Padre Island activities & events, request lodging..

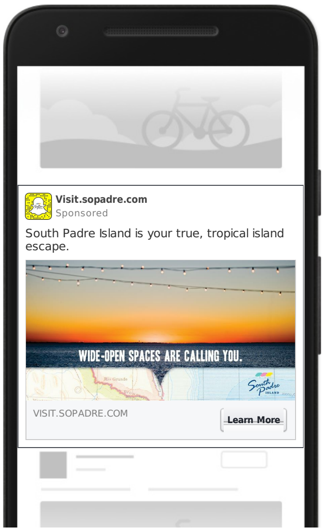
VISIT.SOPADRE.COM

Learn More

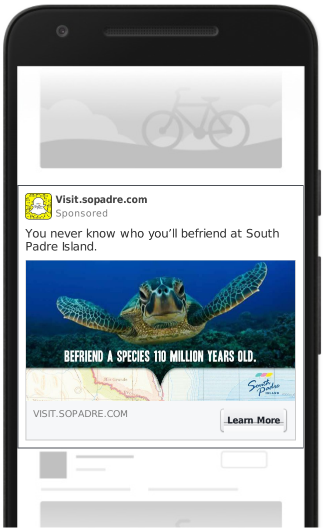
33 Reactions 1 Share

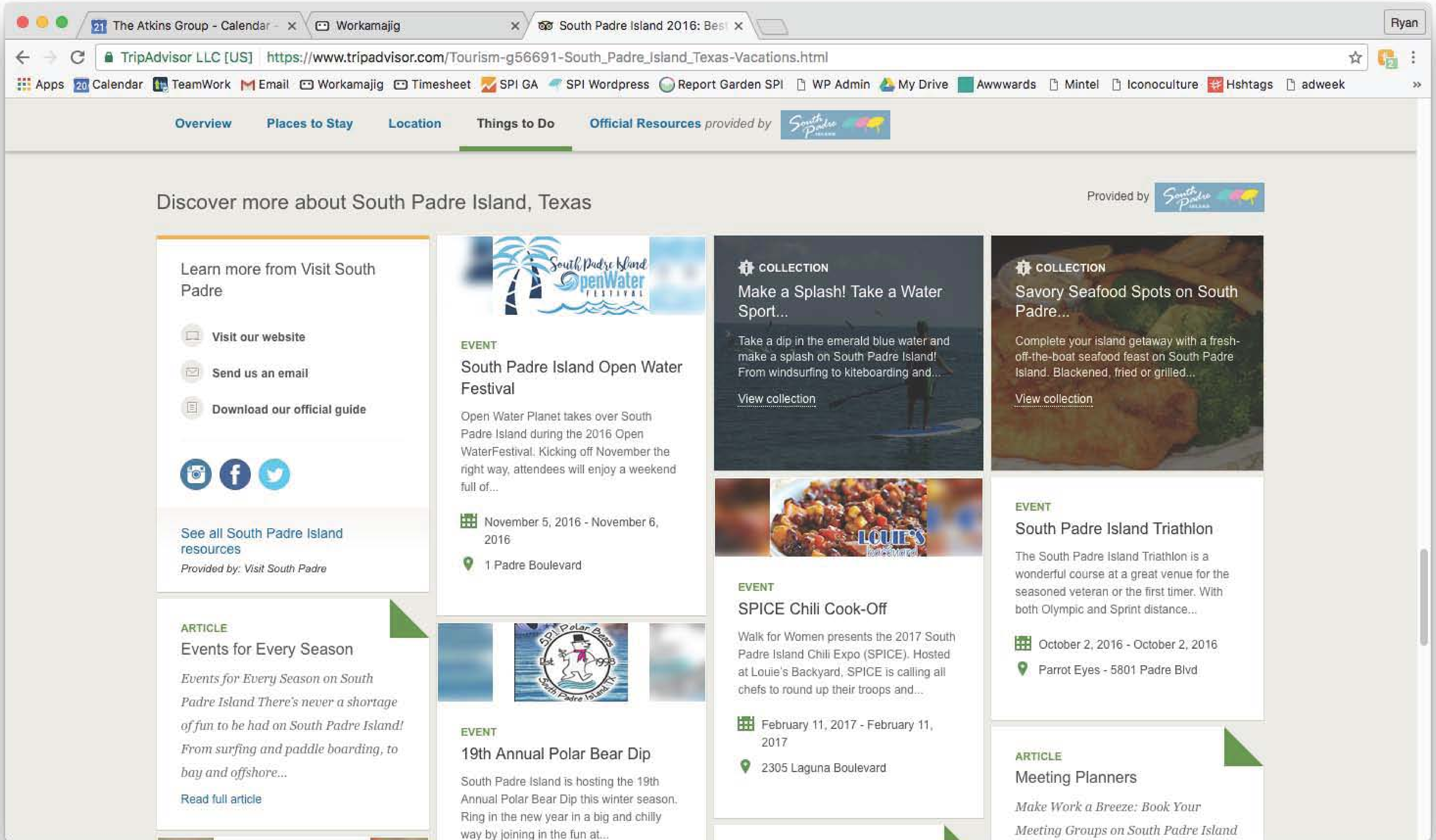
# South Padre Island CVB

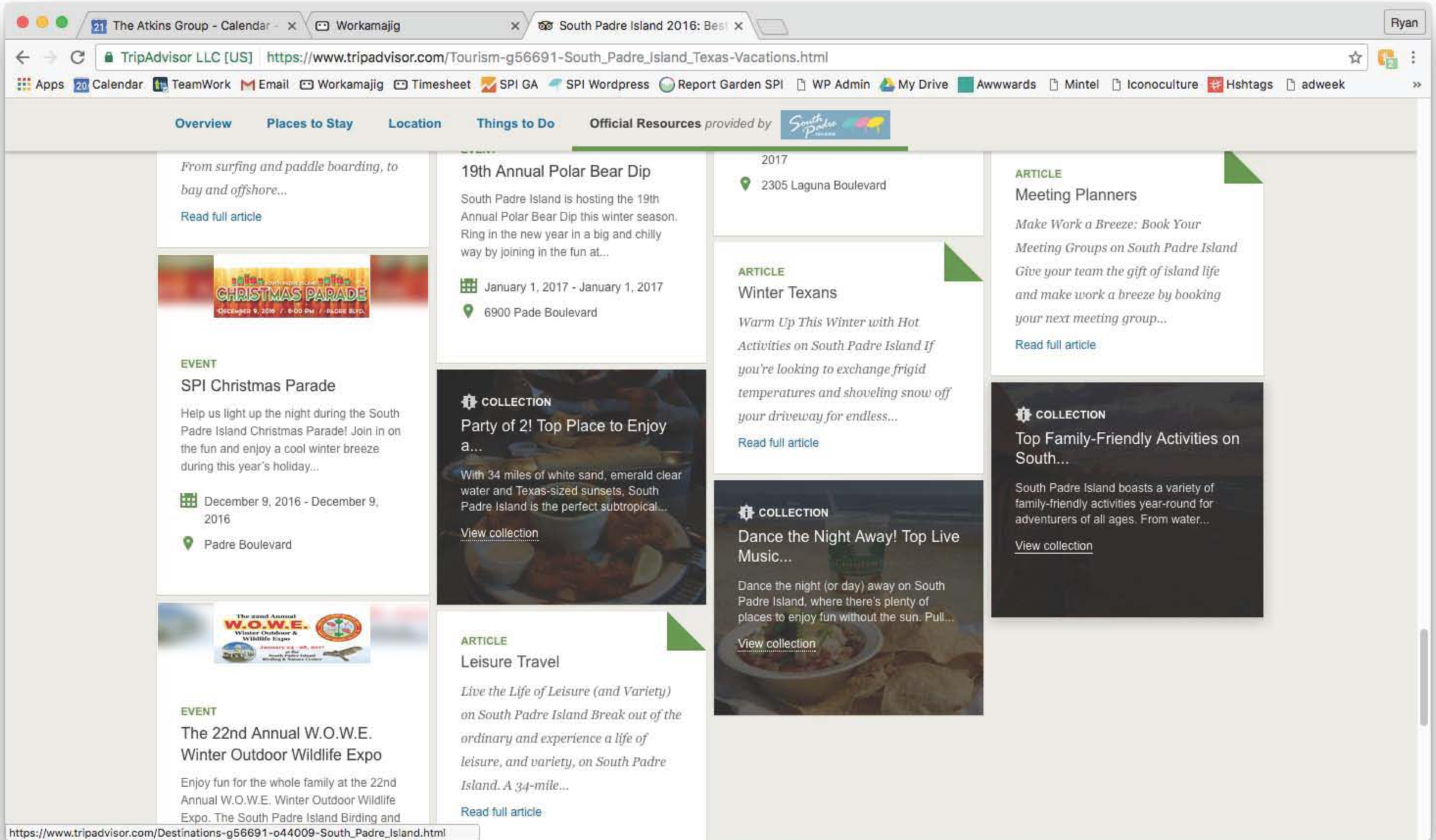
theatkinsgroup

| | Campaign Name |
|---|---|
|  | Family Leisure Q4 - Instagram |



| | Campaign Name |
|---|---|
|  | Nature Tourism Q4 - Instagram |


The Atkins Group - Calendar
Workamajig
South Padre Island 2016: Best
Ryan
TripAdvisor LLC [US] https://www.tripadvisor.com/Tourism-g56691-South_Padre_Island_Texas-Vacations.html
Apps Calendar TeamWork Email Workamajig Timesheet SPI GA SPI Wordpress Report Garden SPI WP Admin My Drive Awwwards Mintel Iconoculture Hshtags adweek
Overview
Places to Stay
Location
Things to Do
Official Resources provided by
Discover more about South Padre Island, Texas
Provided by
Learn more from Visit South Padre
Visit our website
Send us an email
Download our official guide
See all South Padre Island resources
Provided by: Visit South Padre
ARTICLE
Events for Every Season
Events for Every Season on South Padre Island There's never a shortage of fun to be had on South Padre Island! From surfing and paddle boarding, to bay and offshore...
Read full article
South Padre Island OpenWater Festival
EVENT
South Padre Island Open Water Festival
Open Water Planet takes over South Padre Island during the 2016 Open WaterFestival. Kicking off November the right way, attendees will enjoy a weekend full of...
November 5, 2016 - November 6, 2016
1 Padre Boulevard
EVENT
19th Annual Polar Bear Dip
South Padre Island is hosting the 19th Annual Polar Bear Dip this winter season. Ring in the new year in a big and chilly way by joining in the fun at...
COLLECTION
Make a Splash! Take a Water Sport...
Take a dip in the emerald blue water and make a splash on South Padre Island! From windsurfing to kiteboarding and...
View collection
LOUIE'S Backyard
EVENT
SPICE Chili Cook-Off
Walk for Women presents the 2017 South Padre Island Chili Expo (SPICE). Hosted at Louie's Backyard, SPICE is calling all chefs to round up their troops and...
February 11, 2017 - February 11, 2017
2305 Laguna Boulevard
COLLECTION
Savory Seafood Spots on South Padre...
Complete your island getaway with a fresh-off-the-boat seafood feast on South Padre Island. Blackened, fried or grilled...
View collection
EVENT
South Padre Island Triathlon
The South Padre Island Triathlon is a wonderful course at a great venue for the seasoned veteran or the first timer. With both Olympic and Sprint distance...
October 2, 2016 - October 2, 2016
Parrot Eyes - 5801 Padre Blvd
ARTICLE
Meeting Planners
Make Work a Breeze: Book Your Meeting Groups on South Padre Island



The Atkins Group - Calendar | Workamajig | South Padre Island 2016: Best

TripAdvisor LLC [US] https://www.tripadvisor.com/Tourism-g56691-South_Padre_Island_Texas-Vacations.html

Apps | Calendar | TeamWork | Email | Workamajig | Timesheet | SPI GA | SPI Wordpress | Report Garden SPI | WP Admin | My Drive | Awwwards | Mintel | Iconoculture | Hshtags | adweek

Overview | Places to Stay | Location | Things to Do | **Official Resources** *provided by*

*From surfing and paddle boarding, to bay and offshore...*

Read full article



EVENT

SPI Christmas Parade

Help us light up the night during the South Padre Island Christmas Parade! Join in on the fun and enjoy a cool winter breeze during this year's holiday...

December 9, 2016 - December 9, 2016

Padre Boulevard



EVENT

The 22nd Annual W.O.W.E. Winter Outdoor Wildlife Expo

Enjoy fun for the whole family at the 22nd Annual W.O.W.E. Winter Outdoor Wildlife Expo. The South Padre Island Birding and

19th Annual Polar Bear Dip

South Padre Island is hosting the 19th Annual Polar Bear Dip this winter season. Ring in the new year in a big and chilly way by joining in the fun at...

January 1, 2017 - January 1, 2017

6900 Pade Boulevard

COLLECTION

Party of 2! Top Place to Enjoy a...

With 34 miles of white sand, emerald clear water and Texas-sized sunsets, South Padre Island is the perfect subtropical...

View collection

ARTICLE

Leisure Travel

*Live the Life of Leisure (and Variety) on South Padre Island Break out of the ordinary and experience a life of leisure, and variety, on South Padre Island. A 34-mile...*

Read full article

2017

2305 Laguna Boulevard

ARTICLE

Winter Texans

*Warm Up This Winter with Hot Activities on South Padre Island If you're looking to exchange frigid temperatures and shoveling snow off your driveway for endless...*

Read full article

COLLECTION

Dance the Night Away! Top Live Music...

Dance the night (or day) away on South Padre Island, where there's plenty of places to enjoy fun without the sun. Pull...

View collection

ARTICLE

Meeting Planners

*Make Work a Breeze: Book Your Meeting Groups on South Padre Island Give your team the gift of island life and make work a breeze by booking your next meeting group...*

Read full article

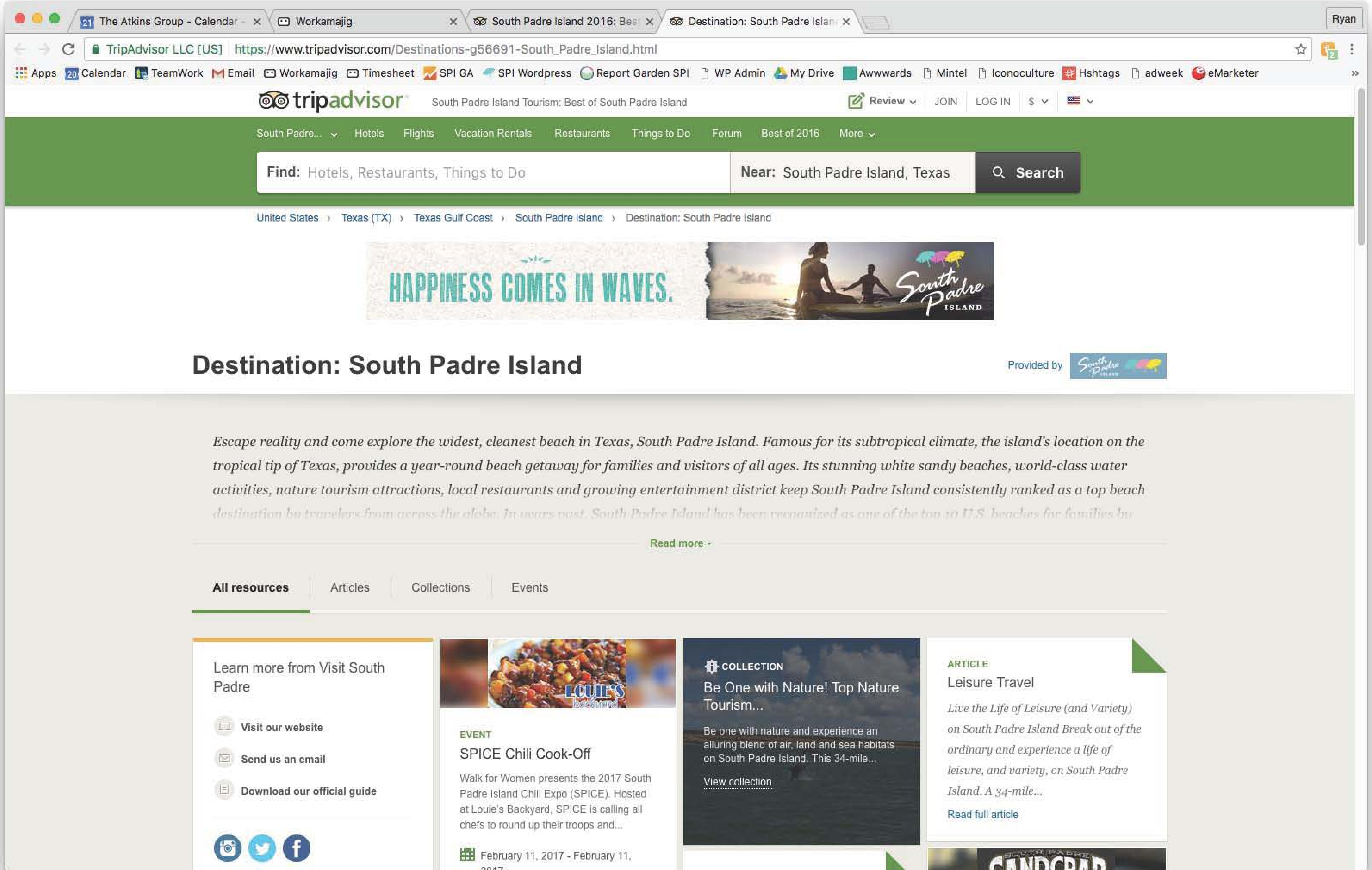
COLLECTION

Top Family-Friendly Activities on South...

South Padre Island boasts a variety of family-friendly activities year-round for adventurers of all ages. From water...

View collection

https://www.tripadvisor.com/Destinations-g56691-o44009-South_Padre_Island.html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South Padre Island 2016: Best
Destination: South Padre Island
Ryan
TripAdvisor LLC [US] https://www.tripadvisor.com/Destinations-g56691-South_Padre_Island.html
Apps Calendar TeamWork Email Workamajig Timesheet SPI GA SPI Wordpress Report Garden SPI WP Admin My Drive Awwwards Mintel Iconoculture Hshtags adweek eMarketer
tripadvisor
South Padre Island Tourism: Best of South Padre Island
Review JOIN LOG IN $
South Padre... Hotels Flights Vacation Rentals Restaurants Things to Do Forum Best of 2016 More
Find: Hotels, Restaurants, Things to Do
Near: South Padre Island, Texas
Search
United States › Texas (TX) › Texas Gulf Coast › South Padre Island › Destination: South Padre Island
HAPPINESS COMES IN WAVES.
South Padre ISLAND
Destination: South Padre Island
Provided by
Escape reality and come explore the widest, cleanest beach in Texas, South Padre Island. Famous for its subtropical climate, the island's location on the tropical tip of Texas, provides a year-round beach getaway for families and visitors of all ages. Its stunning white sandy beaches, world-class water activities, nature tourism attractions, local restaurants and growing entertainment district keep South Padre Island consistently ranked as a top beach
Read more
All resources
Articles
Collections
Events
Learn more from Visit South Padre
Visit our website
Send us an email
Download our official guide
LOUIE'S Backyard
EVENT
SPICE Chili Cook-Off
Walk for Women presents the 2017 South Padre Island Chili Expo (SPICE). Hosted at Louie's Backyard, SPICE is calling all chefs to round up their troops and...
February 11, 2017 - February 11,
COLLECTION
Be One with Nature! Top Nature Tourism...
Be one with nature and experience an alluring blend of air, land and sea habitats on South Padre Island. This 34-mile...
View collection
ARTICLE
Leisure Travel
Live the Life of Leisure (and Variety) on South Padre Island Break out of the ordinary and experience a life of leisure, and variety, on South Padre Island. A 34-mile...
Read full article