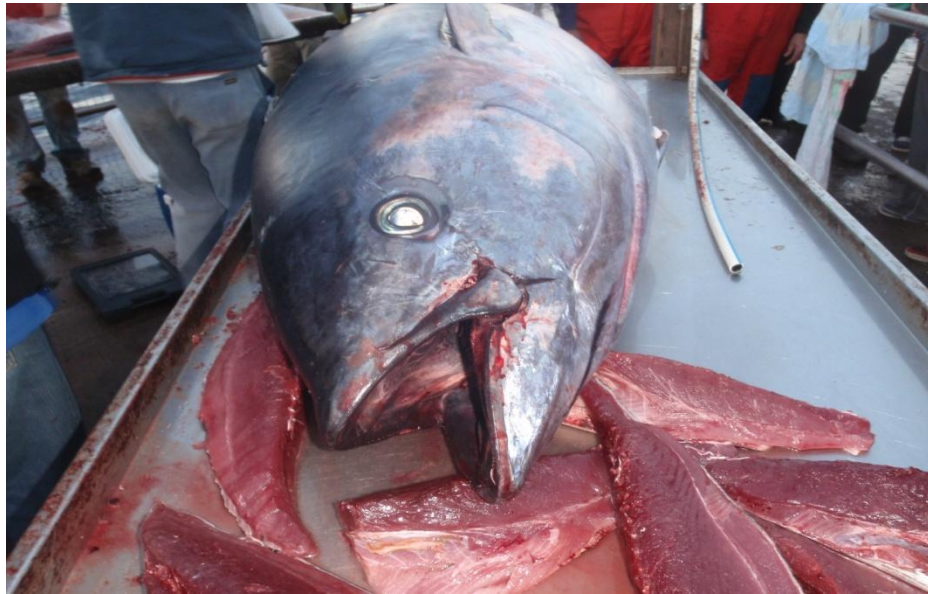


The Recreational Use Value Gained from Recreational Fishing of Southern Bluefin Tuna at Portland, Australia



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Introduction

- ▶ Southern Bluefin Tuna (*Thunnus Maccoyii*) is critically endangered (IUCN 2010)
- ▶ Worldwide adult SBT population has reduced to 3% to 8% of its original size due to overfishing (CCSBT 2010)
- ▶ Current Worldwide Commercial quota:
 - ▶ **9449 tonnes per year**
- ▶ Current Australian Commercial quota:
 - ▶ **4270 tonnes per year**

Introduction cont.

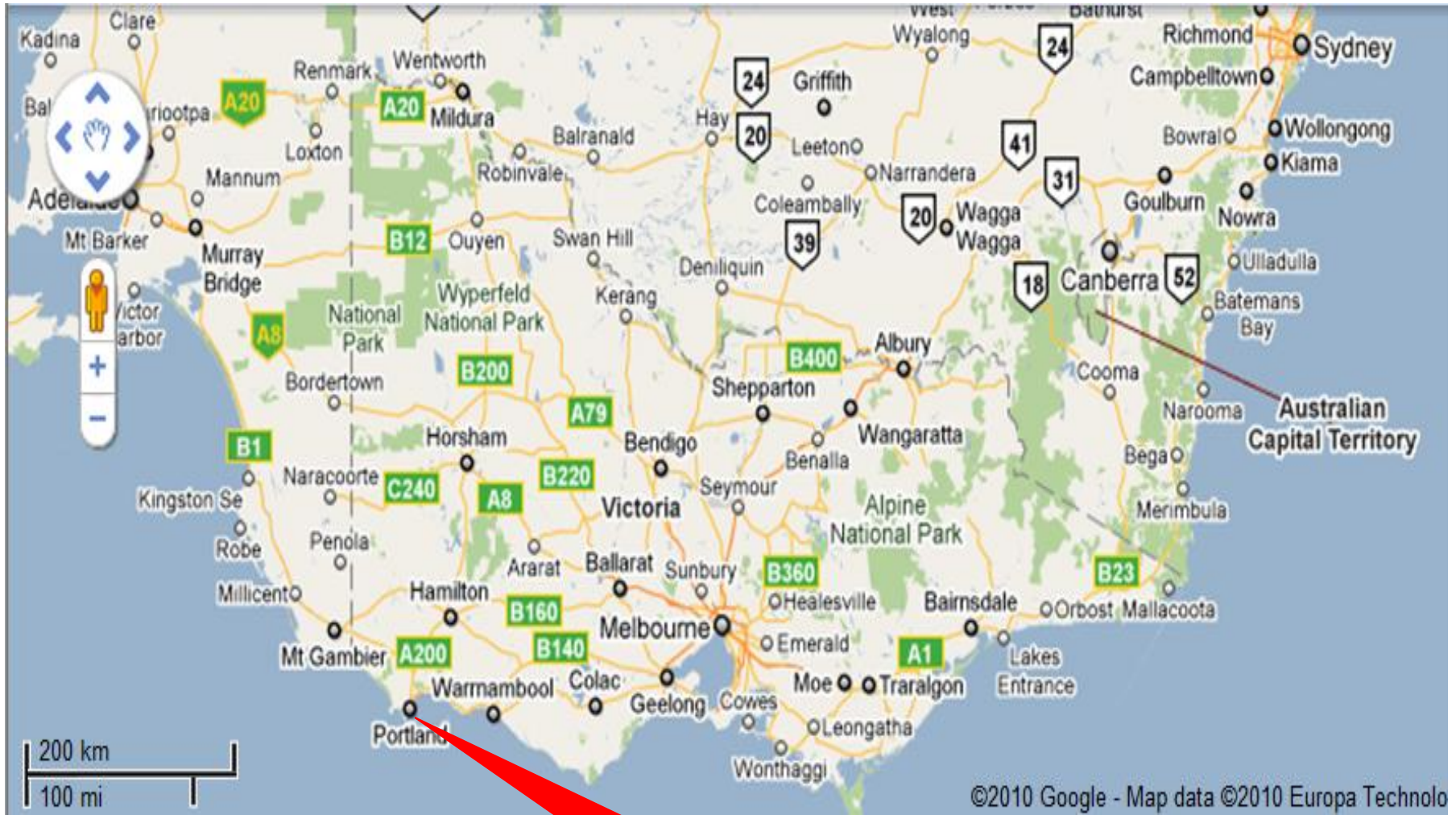
RECREATIONAL FISHING

- ▶ Amount of recreational fishing catch of SBT worldwide is unknown
- ▶ O'Toole (2010) estimates that the 2010 **PORTLAND** recreational take was 140 tonnes
- ▶ If included in Australian commercial quota: 3.3%

Research Question

- What is the **recreational use value** gained from the **recreational fishing** of SBT in Portland?
- Travel cost method (TCM) was used to find the recreational use value





**Portland,
Victoria**

Economic Theory

- ▶ Total Economic Value=Use Value + Nonuse Value
- ▶ Travel Cost Assumption-- Costs of visiting the site reflect the recreational value of the site
- ▶ Consumer Surplus is used to estimate Recreational Use Value
- ▶ Consumer Surplus for a common resource is estimated by area under the demand curve

Step 1 – Data Collection

- ▶ 23 days of data collection (personal interviews)
- ▶ 200 usable samples for travel cost analysis
- ▶ Response rate 40%

Step 2 – Group Respondents

	Distance (Km)	Population	Refined Visits					
Zone 1	0–100	93922	821					
Zone 2	100–200	62990	122					
Zone 3	200–300	387988	456					
Zone 4	300–350	437515	791					
Zone 5	350–400	2902815	2555					
Zone 6	400–450	2086474	1004					
Zone 7	450+	780818	304					

Step 3–Estimate Visit Rate and Travel Cost

	Distance (Km)	Population	Refined Visits	Visit Rate (V/N)*1000	Average Car Costs per Person	Boat Fuel Costs	Fishing Gear Costs	Travel Cost Per Person (\$)
Zone 1	0–100	93922	821	8.74	\$8.04	\$66.34	\$133.08	\$207.45
Zone 2	100–200	62990	122	1.93	\$21.83	\$66.34	\$133.08	\$221.25
Zone 3	200–300	387988	456	1.18	\$39.21	\$66.34	\$133.08	\$238.63
Zone 4	300–350	437515	791	1.81	\$64.30	\$66.34	\$133.08	\$263.72
Zone 5	350–400	2902815	2555	0.88	\$57.88	\$66.34	\$133.08	\$257.29
Zone 6	400–450	2086474	1004	0.48	\$91.49	\$66.34	\$133.08	\$290.91
Zone 7	450+	780818	304	0.39	\$77.63	\$66.34	\$133.08	\$277.05

Step 4– TC Analysis

Estimation of Trip Generation Function

Functional Form (Y, X)	TGF estimation	R ²
Linear-Linear	$VR = -0.073(TC) + 20.45$	0.55
Linear-Log	$VR = -18.47\text{LOG}(TC) + 104.15$	0.58
Log-Log	$\text{LOG}(VR) = -7.497 \text{LOG}(TC) + 41.63$	0.77
Log-Linear	$\text{LOG}(VR) = -0.030 (TC) + 7.81$	0.76
Quadratic	$VR = -1.025(TC) + 0.0019 (TC)^2 + 137.24$	0.77

Step 5 – Onsite Demand Curve

Price	Visits
\$247.00	1
\$216.00	9
\$210.00	10
\$209.00	11
\$190.00	20
\$177.00	29
\$146.00	74
\$0.00	6054

Step 5– Onsite Consumer Surplus Estimate

	Lower Estimate (0% OC included)	Upper Estimate (100% OC included)
Consumer Surplus Per Person Per Visit	\$33.19	\$131.70
Annual Value	\$449,533.24	\$1,325,124.04

Step 6 – Net Present Value

	Lower Estimate	Upper Estimate
Net Present Value	\$2,089,350.22	\$4,978,733.30
Discount Rate	7%	
Duration	10 years	

Future Research

- ▶ How does the marginal value of recreational fishing of SBT in Portland **compare** to the marginal value of commercial fishing of SBT at Port Lincoln, South Australia?

Limitations / Further Research

- ▶ Honours Study
- ▶ Travel Cost as a method– limitations of method eg car fuel, depreciation of boat and car
- ▶ More work to be done on recreational SBT catch