

Racing toward Rockfish Recovery: Community-Based Marine Conservation in the Southern Gulf Islands

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INTRODUCTION

Issue: Declining rockfish populations in the Salish Sea and high levels of recreational fisher noncompliance in Rockfish Conservation Areas (RCAs).

Response: Community-based collaboration between the Galiano Conservancy Association (GCA), Valdes Island Conservancy, University of Victoria School of Environmental Studies, and the Government of Canada (Habitat Stewardship Program).

Research Goals: Assess recreational fisher compliance in RCAs around Galiano Island and engage in public outreach and education efforts to raise general awareness of RCAs and improve fisher compliance.

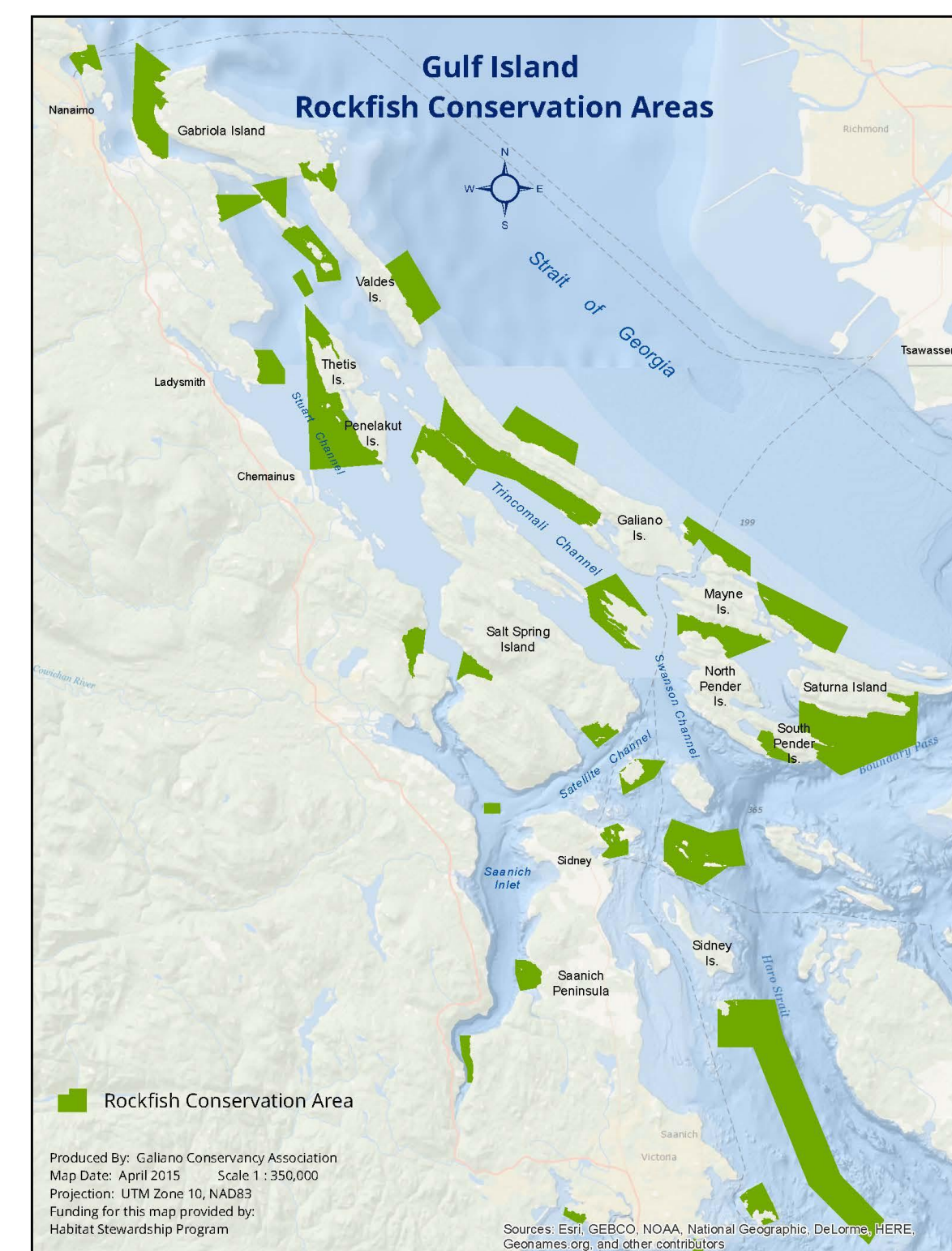


Figure 1. RCAs in the Southern Gulf Islands are shown in green.

METHODS

Outreach efforts

- Distribution of signage
- Maps and posters
- Community workshops and articles
- Community event attendance
- Awareness through social media

Structured in-person interviews with recreational fishers

- Around Galiano Island
- Based off of Lancaster *et al.*'s work (2015)

Land-based photo monitoring

- Monitored six locations in three RCAs around Galiano Island
- Images were analysed for suspected and confirmed fishing events
- Based off of Lancaster *et al.*'s work (2017)

Plans to publish a scientific paper highlighting the impact and efficacy of community-based conservation efforts.



Figure 2. Trail cameras overlooking RCAs adjacent to Galiano Island were programmed to go off every five minutes during daylight hours from May to September.

RESULTS

Outreach

- RCA information signs distributed from 2015-2017.
- RCA maps and posters created and distributed.
- Numerous conservation events attended.
- Workshops.
- Development of Rockfish Conservation Project Facebook page.

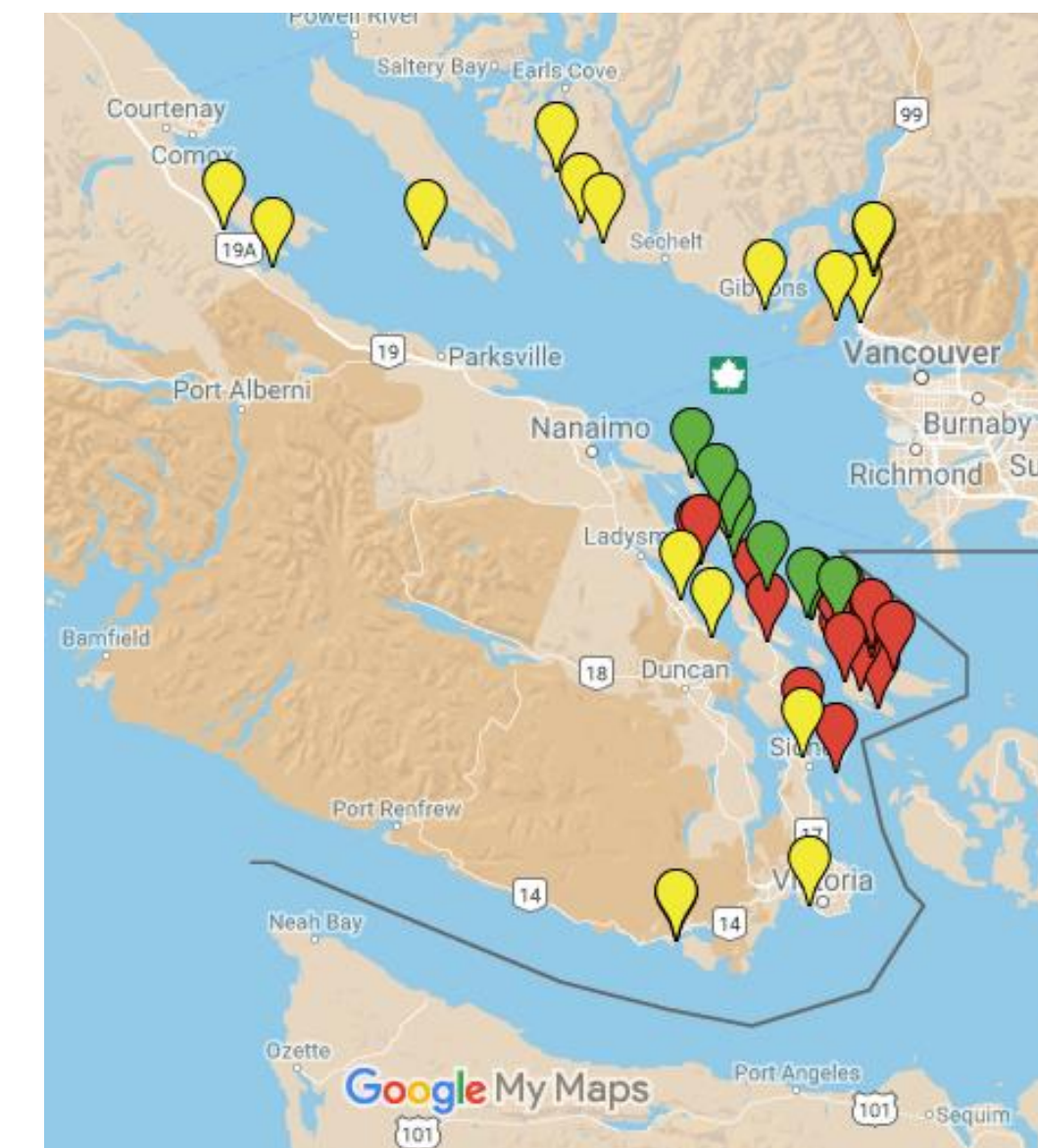


Figure 3. Locations of signs. Green: signs posted in 2015; red: 2016; yellow: 2017.

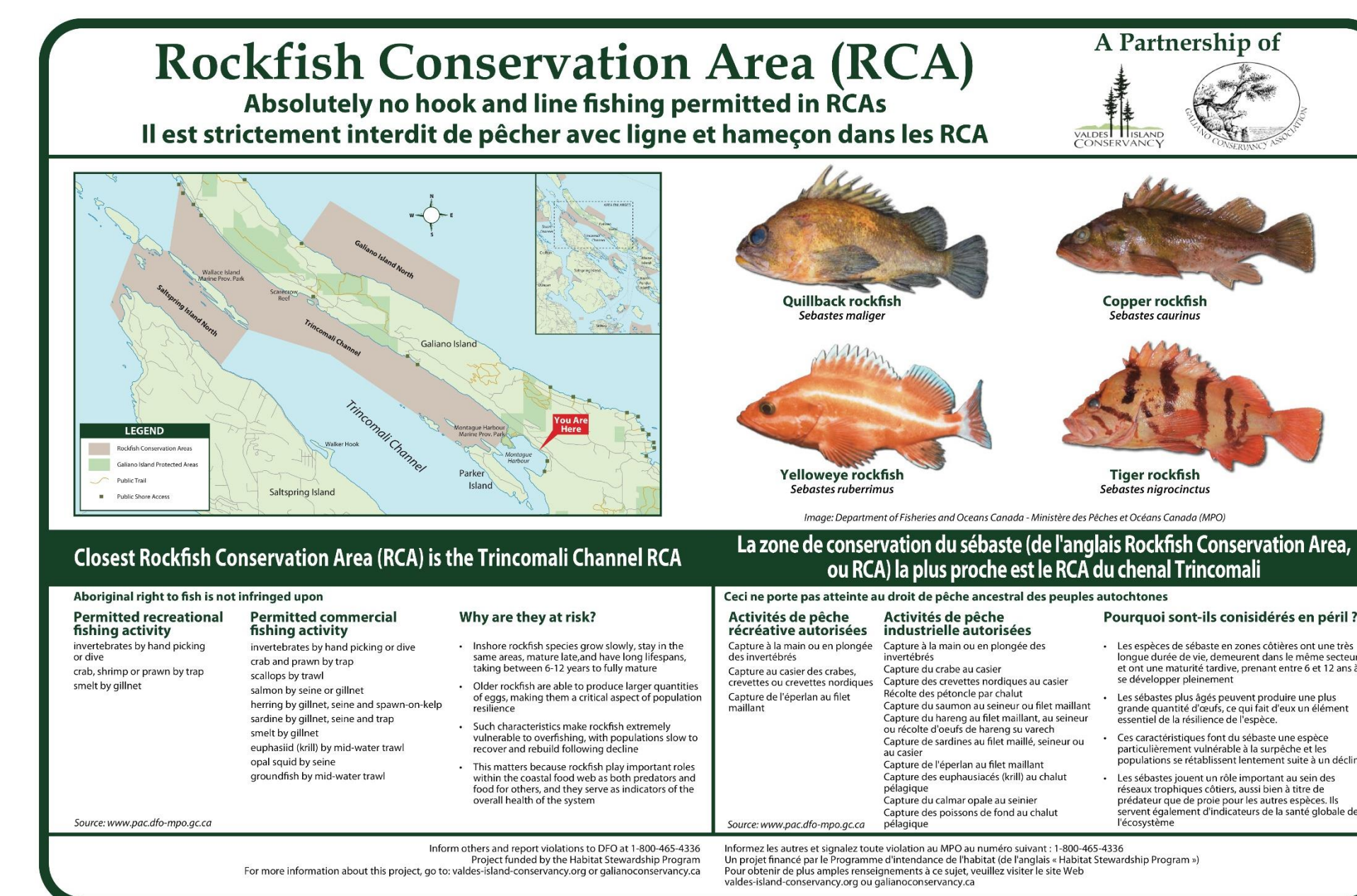


Figure 4. One of the signs put up at Montague Harbour Marine Provincial Park. Location of the reader, common local rockfish species, and regulations are posted in English and French.

Interviews

Table 1. Some of the summarized results from interviews conducted with recreational fishers around Galiano Island (2015, n= 25; 2017, n= 31) (Vachon and Kushneryk, 2017). 2014 data are from Lancaster *et al.*'s study, from different locations around the Southern Gulf Islands (n= 318) (2015). Interviews were conducted during peak fishing season of each year.

Participants who...	2014 (%)	2015 (%)	2017 (%)
Heard of RCAs before beginning the survey	75	80	97
Had seen GCA rockfish outreach materials	N/A	24	52
Responded with recreational fishing activities not permitted in RCAs	N/A	68	58
Were confident in RCA boundaries in the areas they fish	41	52	42
Identified lack of awareness as the primary reason recreational fishers fish in RCAs	55	36	45

Camera Monitoring

Table 2. Summarized data from trail camera monitoring in 2016 and 2017, collected from three RCAs adjacent to Galiano Island (Vachon and Kushneryk, 2017). Number of suspected or confirmed fishing incidents decreased from 15.6% in 2016 to 11.8% in 2017.

Year	Percentage of confirmed or suspected fishing incidents normalized by days monitored (%)	Total number of camera days monitored	Number of sites monitored
2016	15.6	473	6
2017	11.8	287	6



Figure 5. Researchers Tobias Scharvogel and Katie Kushneryk install a trail camera overlooking the Trincomali Pass RCA on Galiano Island.

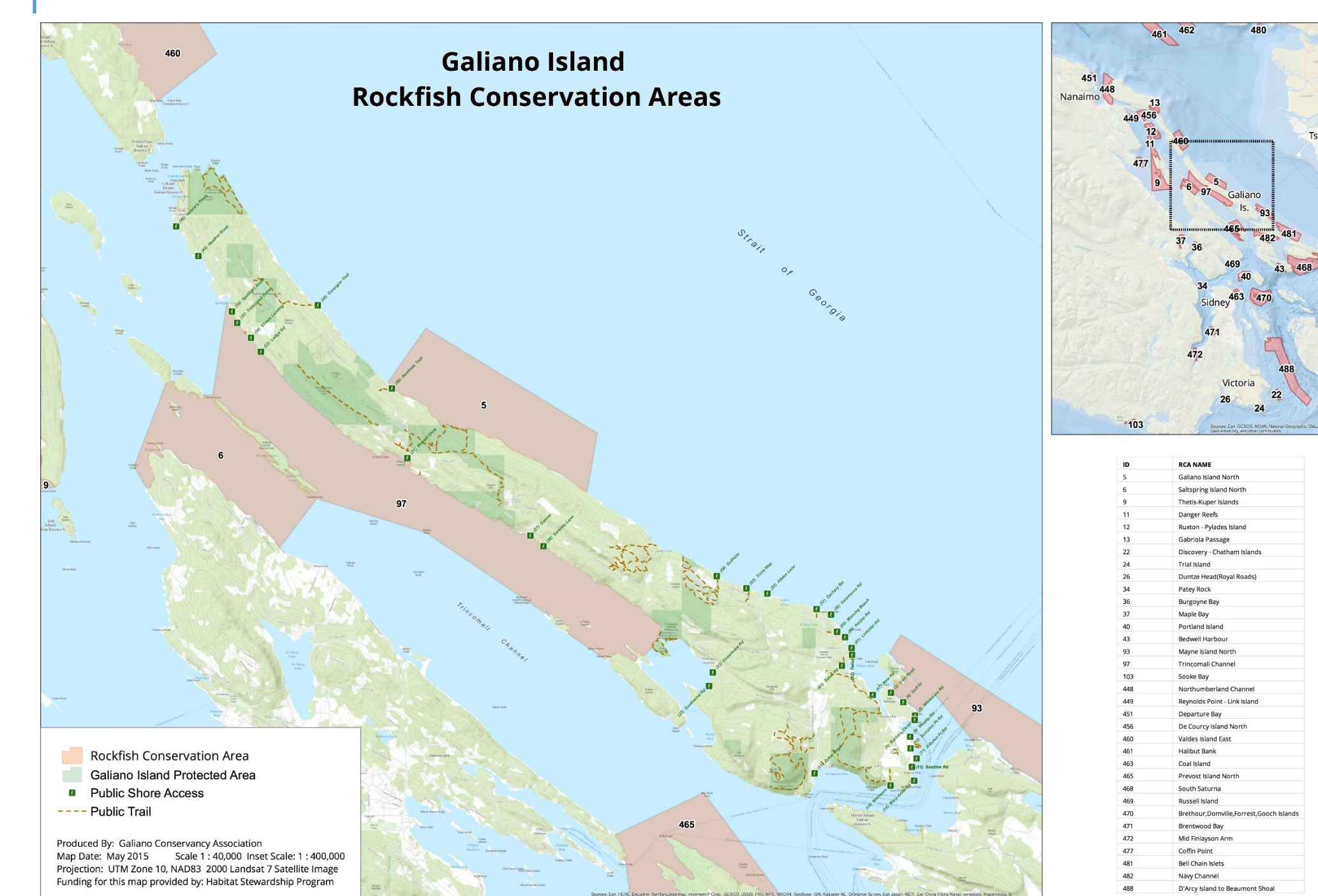


Figure 6. Three RCAs adjacent to Galiano Island (Trincomali Channel RCA, Mayne Island North RCA, and Galiano North RCA) are depicted in red.

CONCLUSIONS

- General awareness of RCAs among recreational fishers interviewed on Galiano Island increased from 2015 to 2017.
- Overall recreational fishing effort recorded by trail cameras in RCAs adjacent to Galiano Island decreased from 2016 to 2017.
- Community-based initiatives have potential to be an effective method of conservation.
- Much work is still needed to be done to make RCAs an effective tool. Research must be continued to determine long-term trends.
- Suggestions that came up through structured interviews for how to improve rockfish conservation include:
 - RCA overlay for boating navigation systems
 - Public education
 - Increased signage



Figure 7. Researcher Katie Kushneryk stands next to an RCA on Galiano Island, providing information on RCAs and rockfish conservation to the public as part of an outreach program.

REFERENCES

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- Vachon, A., & Kushneryk, K. (2017). *Rockfish Conservation Areas in the Salish Sea: Compliance and community-based initiatives. 2015-2017 update*. University of Victoria and Galiano Conservancy Association, under the supervision of Dr. Natalie Ban and Jenna Falk.

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