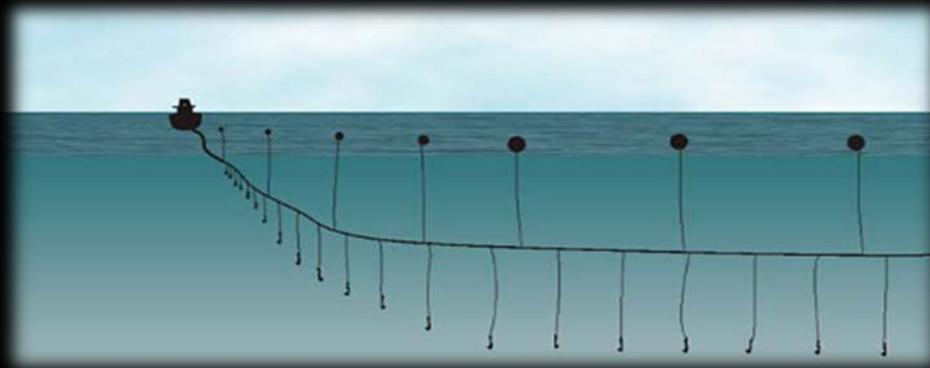


# Information Sharing Networks and Ethnic Homophily in Hawaii's Longline Fishery



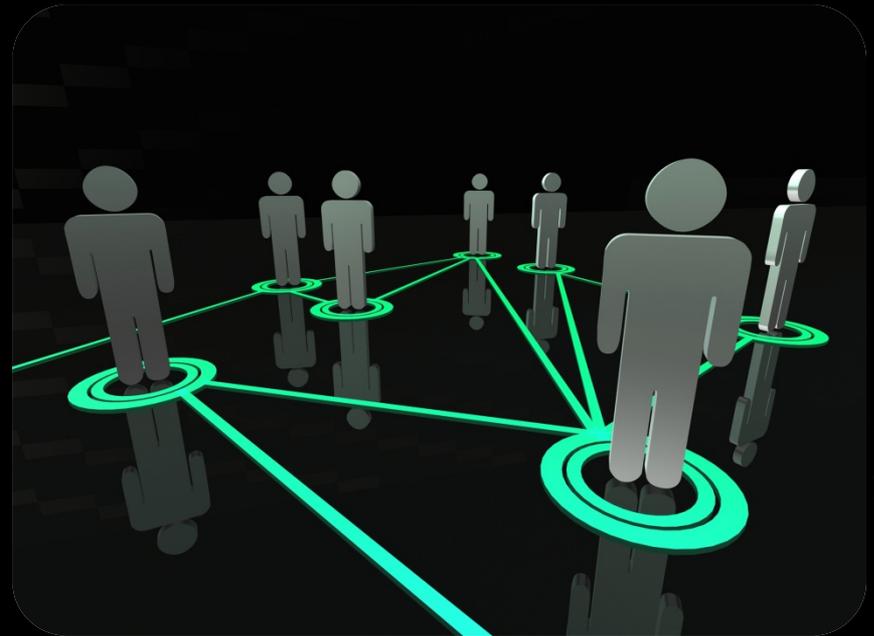
Michele Barnes-Mauthe\*, Shawn Arita,  
Stewart Allen and PingSun Leung

# Introduction

## Social Capital

"...connections among individuals – social networks, and the norms of reciprocity and trustworthiness that arise from them." – (Putnam 2001)

## Social Networks



# Social Capital

(Grafton 2005, Bodin and Prell 2011)

## Bonding

Close reciprocal ties

- trust & reciprocity
- joint-action & cooperation
- norms, rules & sanctions
- conflict resolution & cooperation

## Linking

Ties across disparate groups

- Diffusion of innovation & scientific information

## Bridging

Weaker ties; similar actors

- diverse knowledge & resources
- trust across groups
- connect & mobilize stakeholders

# Introduction

**Project Goal** → Examine the role of ethnic diversity on the level and distribution of social capital in Hawaii's longline fishery (HLF) by analyzing fisher's social networks

## HLF Vessel Ownership:

Korean-American (24)

Euro-American (41)

Vietnamese-American (57)



source: panoramio.com

# Methodology

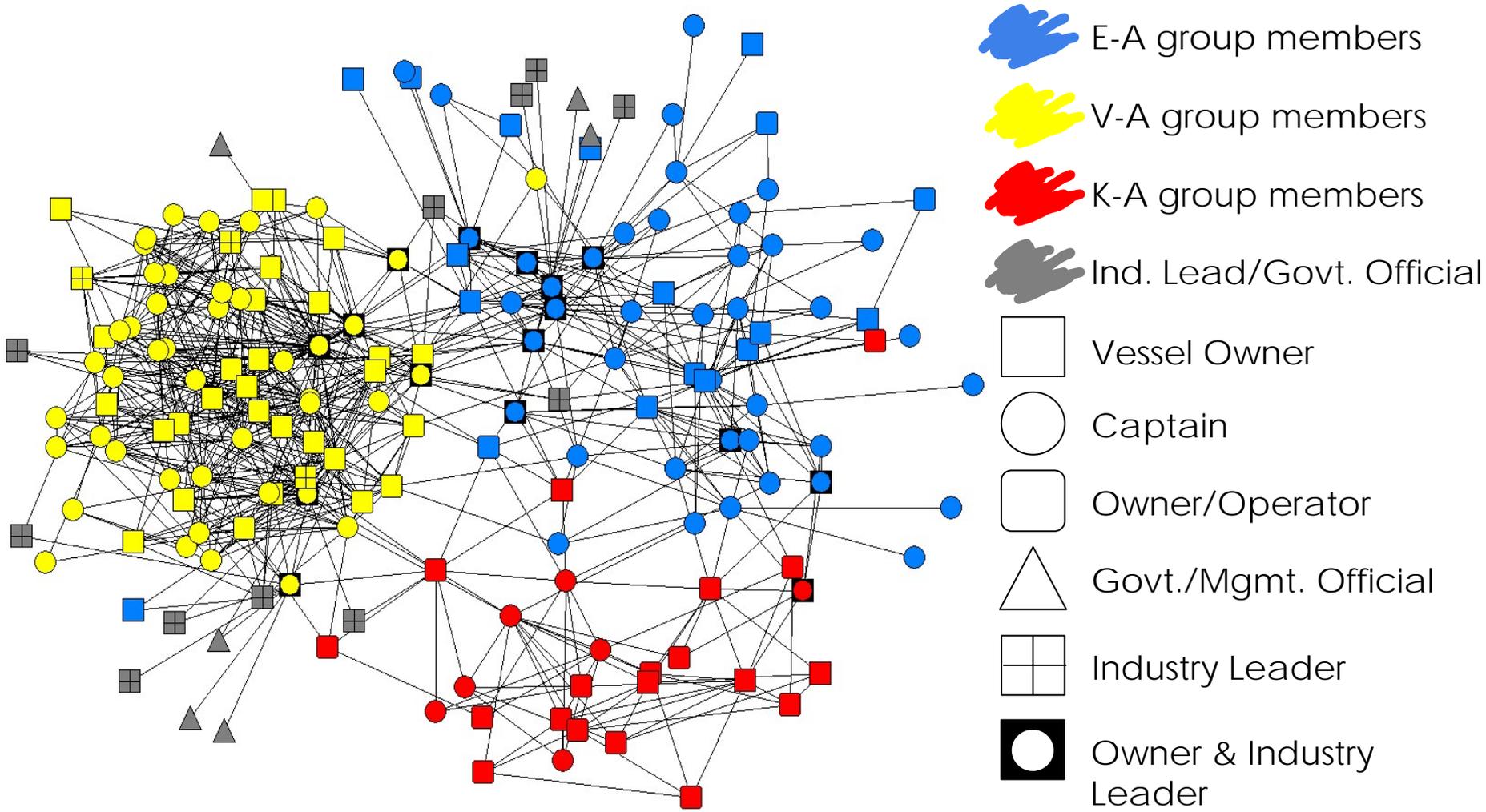
## Social Network Analysis

- Structured survey to capture information sharing & relational data
- Population: all active vessel owners and operators
- Analyzed with UCINET and visualized with NetDraw



Response Rate: 91.2% (145 of 159 fishers)

# HLF – all fishermen networks



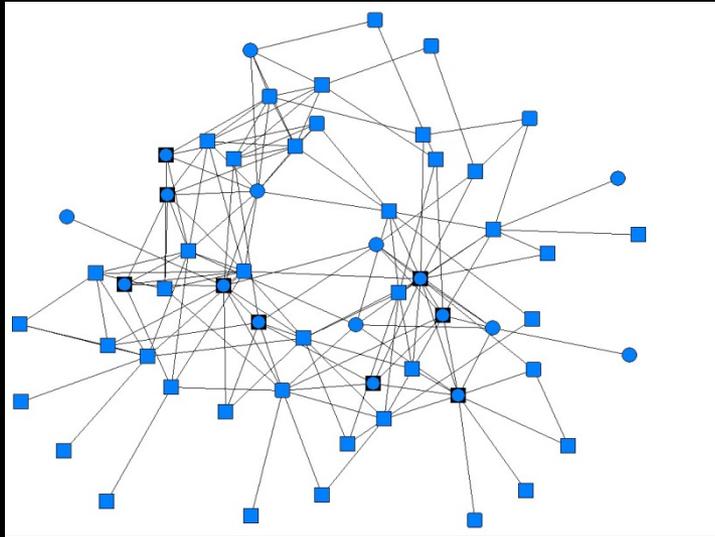
(Barnes-Mauthe et al. 2012a, Barnes-Mauthe et al. 2012b, Barnes 2012)

	Entire HLF	E-A	K-A	V-A
Total actors	179	59	25	77
No. of ties	895	189	73	542
<i>Avg. outdegree</i>	<i>5.00</i>	<i>3.26</i>	<i>2.92</i>	<i>7.04</i>
No. of components	1	2	1	1
Indicators of network cohesion				
Largest k-core	8	4	4	8
No. of actors in largest k-core	48	34	16	48
<i>Proportion in 4-core and higher</i>	<i>0.75</i>	<i>0.58</i>	<i>0.64</i>	<i>0.99</i>
Indicators of structural holes				
<i>No. of cut-points</i>	<i>10</i>	<i>7</i>	<i>0</i>	<i>1</i>
No. of blocks	20	11	1	2
Proportion of cut-points to total points	0.06	0.09	0.00	0.01
<b>Estimated network configuration</b>	<b>Coalitional/ Bridging</b>	<b>Bridging</b>	<b>Complete/ Bonding</b>	<b>Complete/ Bonding</b>

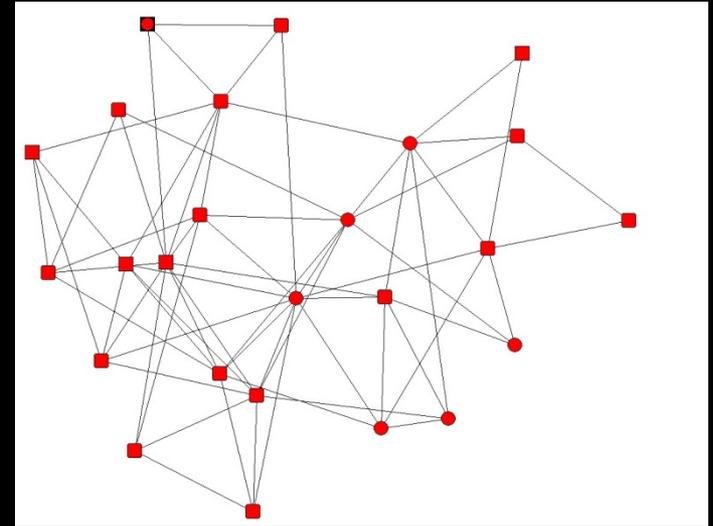
Framework: Crowe (2007)

# Results – network comparisons

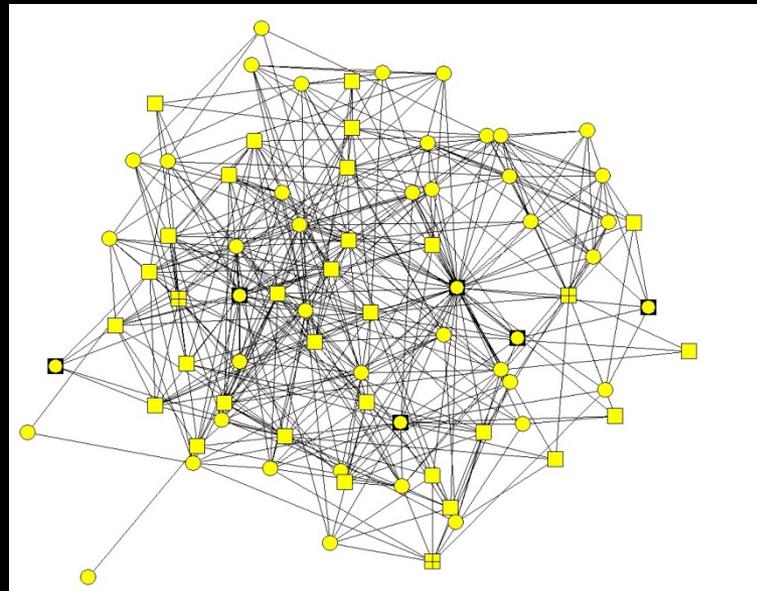
E-A



K-A



V-A



(Barnes-Mauthe et al. 2012a,  
Barnes-Mauthe et al. 2012b,  
Barnes 2012)

# Results – observed vs. expected relations

	E-A	K-A	V-A	Ind. Leaders/Govt. Officials
E-A	1.91	0.37	0.13	0.35
K-A	0.07	4.00	0.11	0.08
V-A	0.09	0.00	3.25	0.98

Within Ethnic Groups = Bonding Social Capital

Between Ethnic Groups = Bridging Social Capital

Between Fishers & Mgmt/Govt. Officials  
= Linking Social Capital

# Conclusions

- Ethnic diversity results in a homophily effect – negative impact on collaboration, cooperation, conflict resolution
- The K-A group appears fragmented in terms of linking social capital & from the V-A community – barrier to cooperation
- Ties do exist across groups – identify key individuals
- Each ethnic group has a diverse network structure – different implications for management

# Acknowledgements

- We would like to thank the Pelagic Fisheries Research Program for funding support
- We also thank our translators Sunny Bak and Jennifer Tran for their hard work and dedication in helping to complete the fieldwork for this project
- We are also very grateful to all the HLF fishers for their participation in this study



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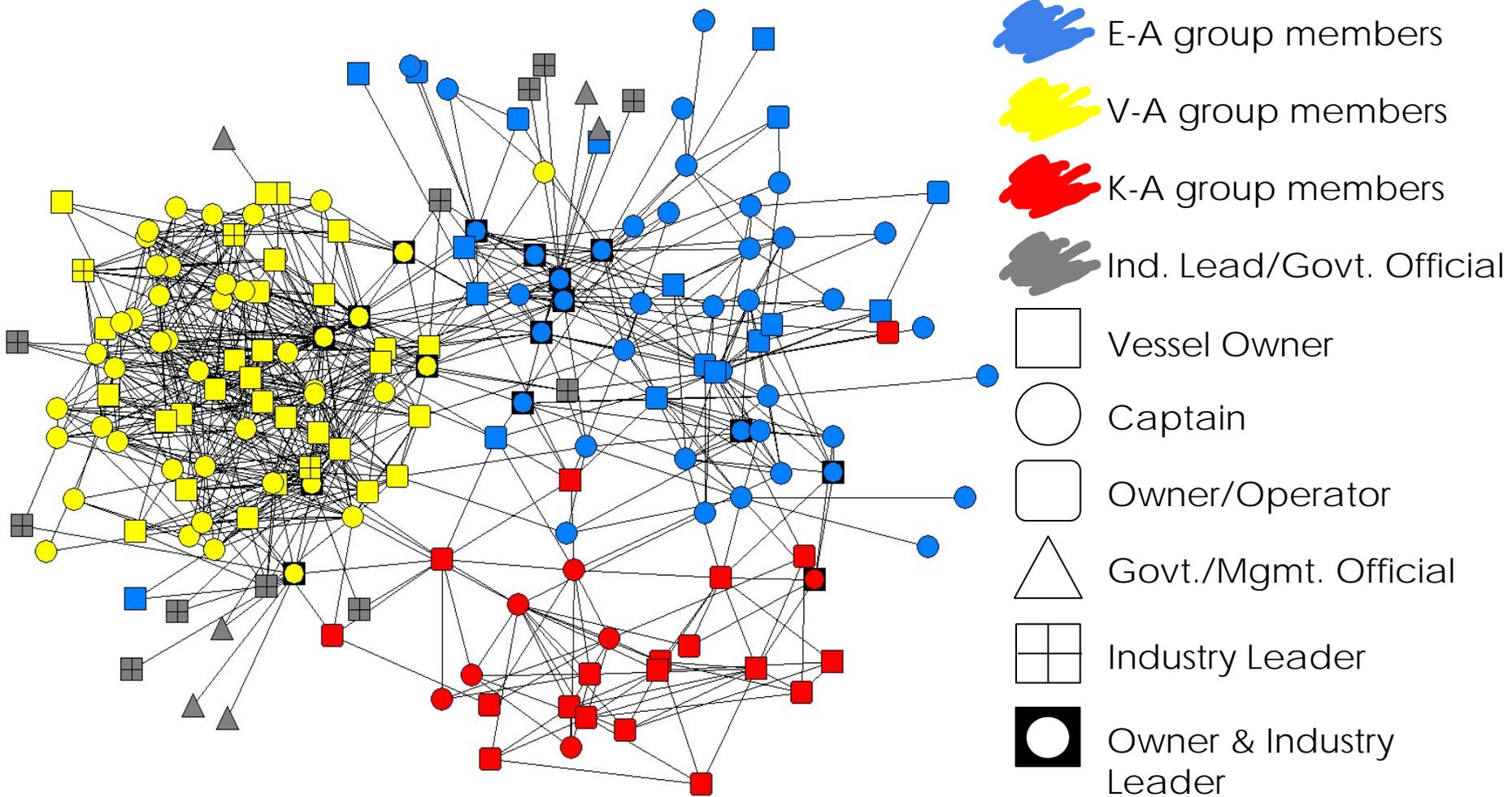
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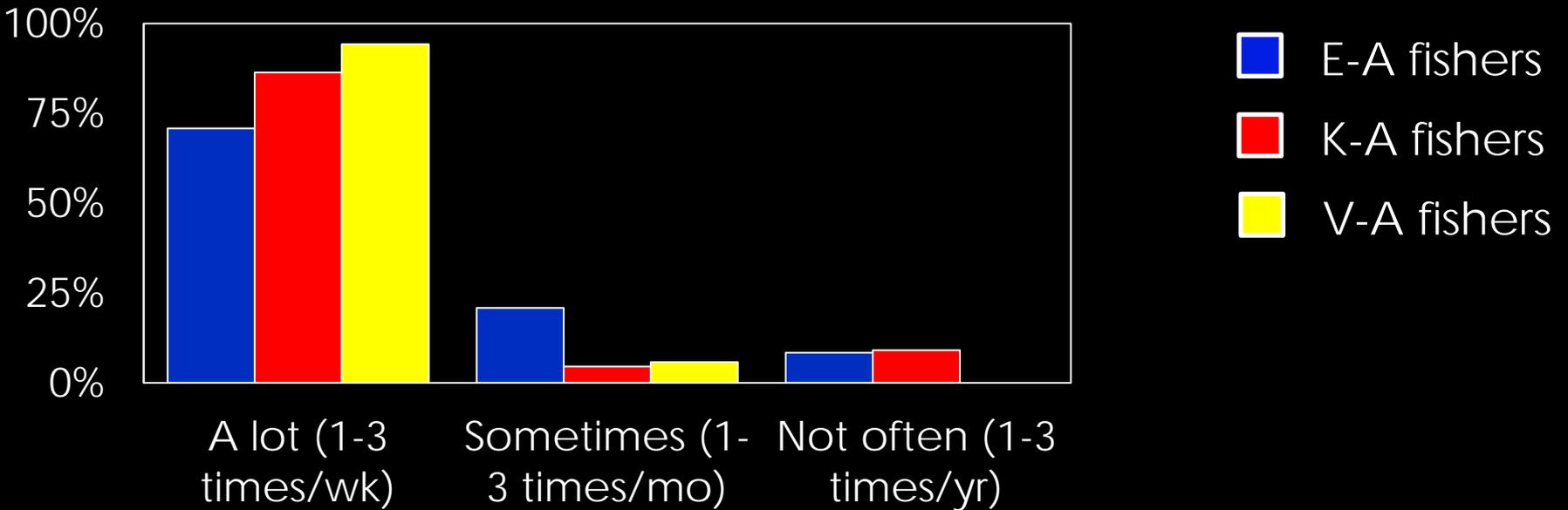
# Mahalo



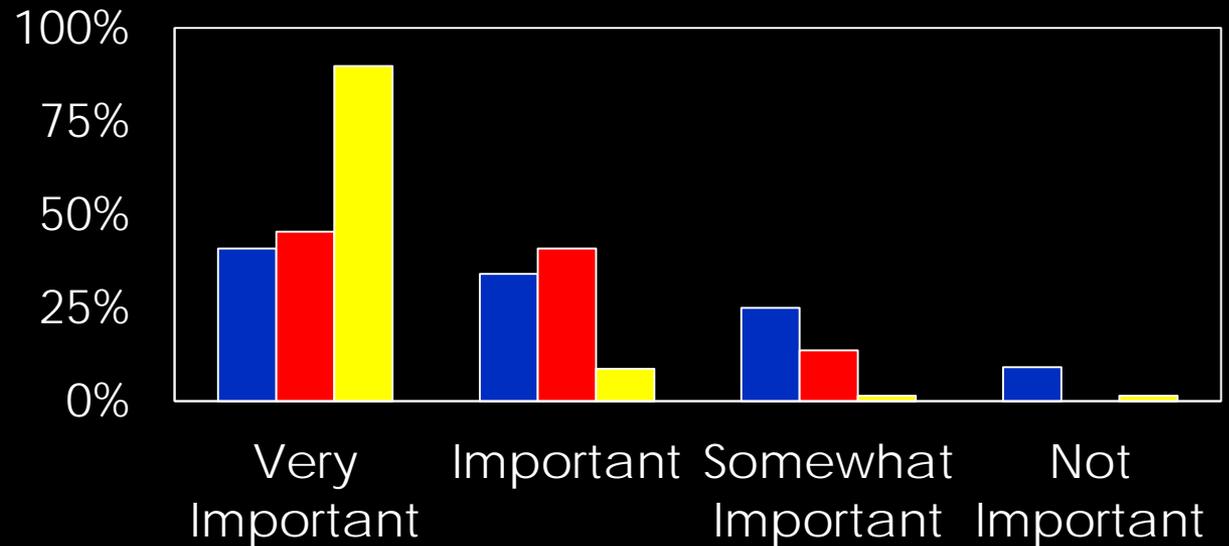
Questions?



## Frequency of Info Sharing



## Importance of Info Sharing



# Results - what type of information do fishers exchange?

	Fish Activity	Gear	Regulations	By-catch	Hiring	Vessel Tech/ Maint.	Site Catch	Weather
<b>E-A</b>	89%	70%	74%	65%	55%	72%	83%	64%
<b>K-A</b>	99%	72%	45%	27%	41%	67%	95%	89%
<b>V-A</b>	98%	95%	97%	93%	90%	68%	55%	57%
<b>All</b>	<b>96%</b>	<b>86%</b>	<b>86%</b>	<b>80%</b>	<b>76%</b>	<b>69%</b>	<b>66%</b>	<b>61%</b>

(Barnes-Mauthe et al. 2012a)