



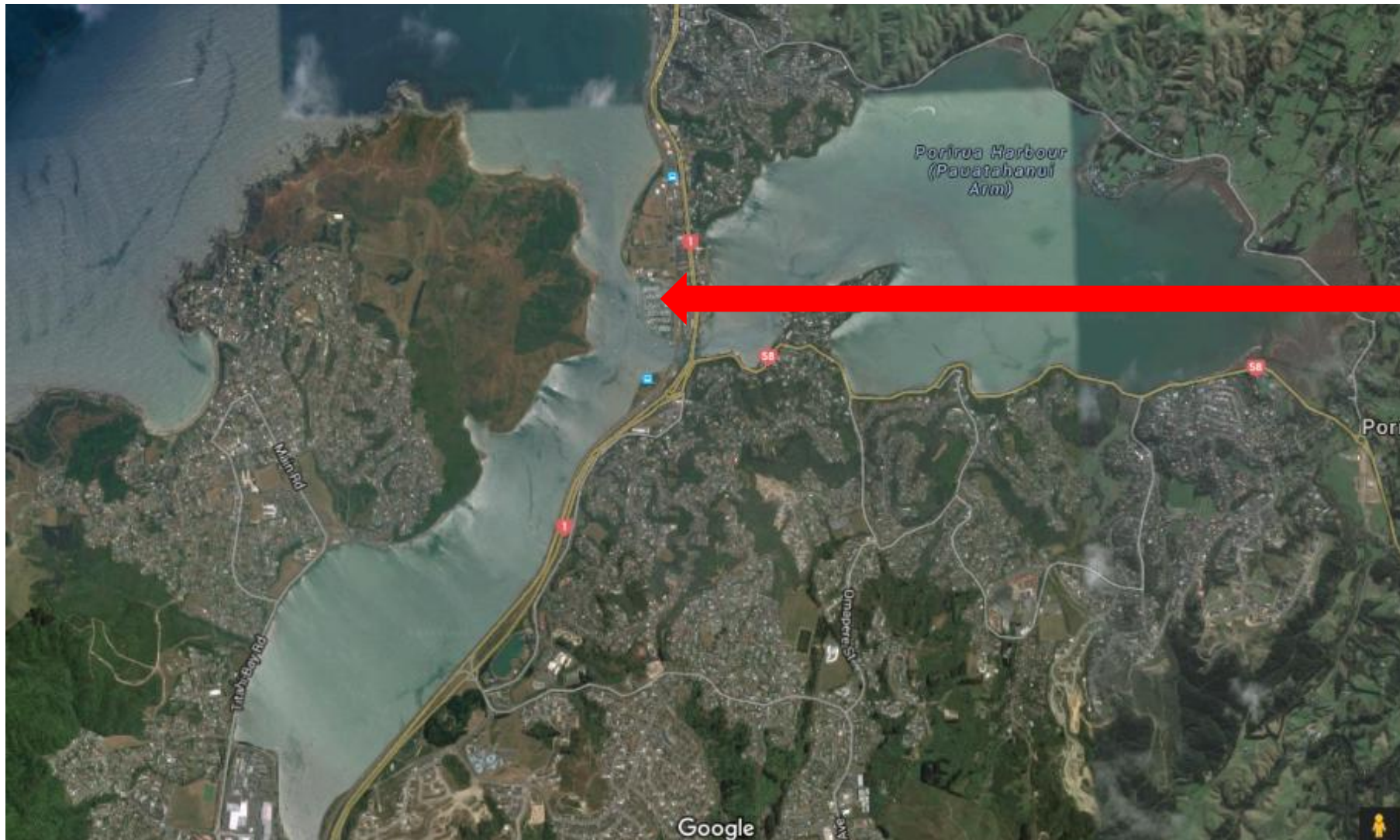
MARINE BIOSECURITY FROM A MARINA MANAGER'S PERSPECTIVE

PETER HART

Marina Manager, Mana Marina, Porirua City



PORIRUA HARBOUR





The map displays the following ferry routes and ship names:

- North Island:**
 - Auckland:** F47, Frances M, Arca, Matariki of Manx, Wild Goose, Carpe Diem, Delfino, Keruru, Zingara, Odyssey, Synergy, Striker, Sea Style, Munyana, Caledonia, Apteryx, Waitui, Dorado, Carol Joy, Integrity, Tara II, Stokes, Sadira, F05, F03, Eon, Kaleva, Fiedermaus.
 - Bay of Plenty:** Maxum, Ariana, Bonita, Hukawai, Superstar, E36, Ace, Redeemer, Libra, Chara, Morning Sky, E24, Arohanui, E20, Futura, Keep it Moving, Brewer, Snowgoose, Mystery of Mana, Sterling, Meteor, Prince, Silver Shadow, Beatrice.
 - Central:** E45, Tasmania, E41, Sergeant Pepper, Yogi's Mistress, Summer Magic, Matatahi, Virginia Gold, Kakra-J, Tattinger, Arab, Lady Pat, Arbitare, Vesper, Copperfield, Wildfire, Spindrift, Tetega, Rampage, Red Baron, Warrior, Kimihia, Haumui, Saltwood.
 - South Island:** Kay Cee, Cosican, Kerbie, Wife II, Monowai, Swiftsure, Hope, Aqua Verde, Capella, Southern Cross, Chico, Virginia Reel, Morning Star, Onça, Silent Wings, The Night Train, Lee Breeze, D09, Magic Carpet Ride, Crystal Voyager, Viseur, Nerissa.
 - Other:** D36, Strait Runner, Nagu, Enigma, Yi Bei Cha, Karaka, Wild Goose, Anticipate, Dauntless, Wassail II, Allora, D14, Pussyfooting, Odysseus, Lady Muriel, Desiree, Mytilene.
- South Island:**
 - Christchurch:** Crew-Z, Maitai, Alcamist, Stray Cat, Kupe, Celeste, Ika, Broka, Terawhiti, Wandering Willy, Playtime, Pebbles, Sabal Sabal, Hype, Meantime, Strophe, C06, Thalassa, Val d'or, Kairunga.
 - Dunedin:** Sea Shanty, Mistique, Renegade, Sunbeam, Crescendo, C33, Ladies Choice, Astron, Wiropet, Blue Willow, Adrenalin, Amazing Grace, Anny, Zeppelin, Buccaneer, Venator, Osprey, Sundaze, Rachel V, Sea Fever, C03, Force Five.
 - Other:** Sundancer, Coquelicot, La Reina, B36, Honey mead, Santana, Luna, Verdict, Flinders, Budgie Boy, Sounds Good, Kasumi, Courtesan, Tara, Chantal, B14, Koa, B10, B09, Kiwi Breeze, Christie M, Escalation, Mohua, ady of Avenel, Mataara II, Monterey.
- Other:** Snow White, Rosebud, Midnight Express, Alinam, Anbar, A26, Kindred Spirit, Kiwi Kan, Alibi, Cavalier, Quatramis, Sonsie of Vict, Tuxedo, Extra's, VK1, Mercury Fisher, Tangaroa, Barossa, Moon Magic, A38, Joshua Slocum, Windermere, Te Kuaka, Cat'ch.



CHALLENGES

- Detection of marine pests
- Control / Prevention of spreading marine pests
- Cost of eradication marina pests
- Education of vessel owners
- Dealing with multiple parties



RECENT EVENTS AT MANA MARINA

- Detection of *Styela clava* – Sea Squirt – in Mana Marina
(February 2016)
- Detection of *Clavelina lepadiformis* - Light bulb Ascidian in
Mana Marina (April 2016)
- Detection of *Ectopleura* – in Onepoto Arm, Lower Porirua
Harbour (May 2016)



SEA SQUIRT

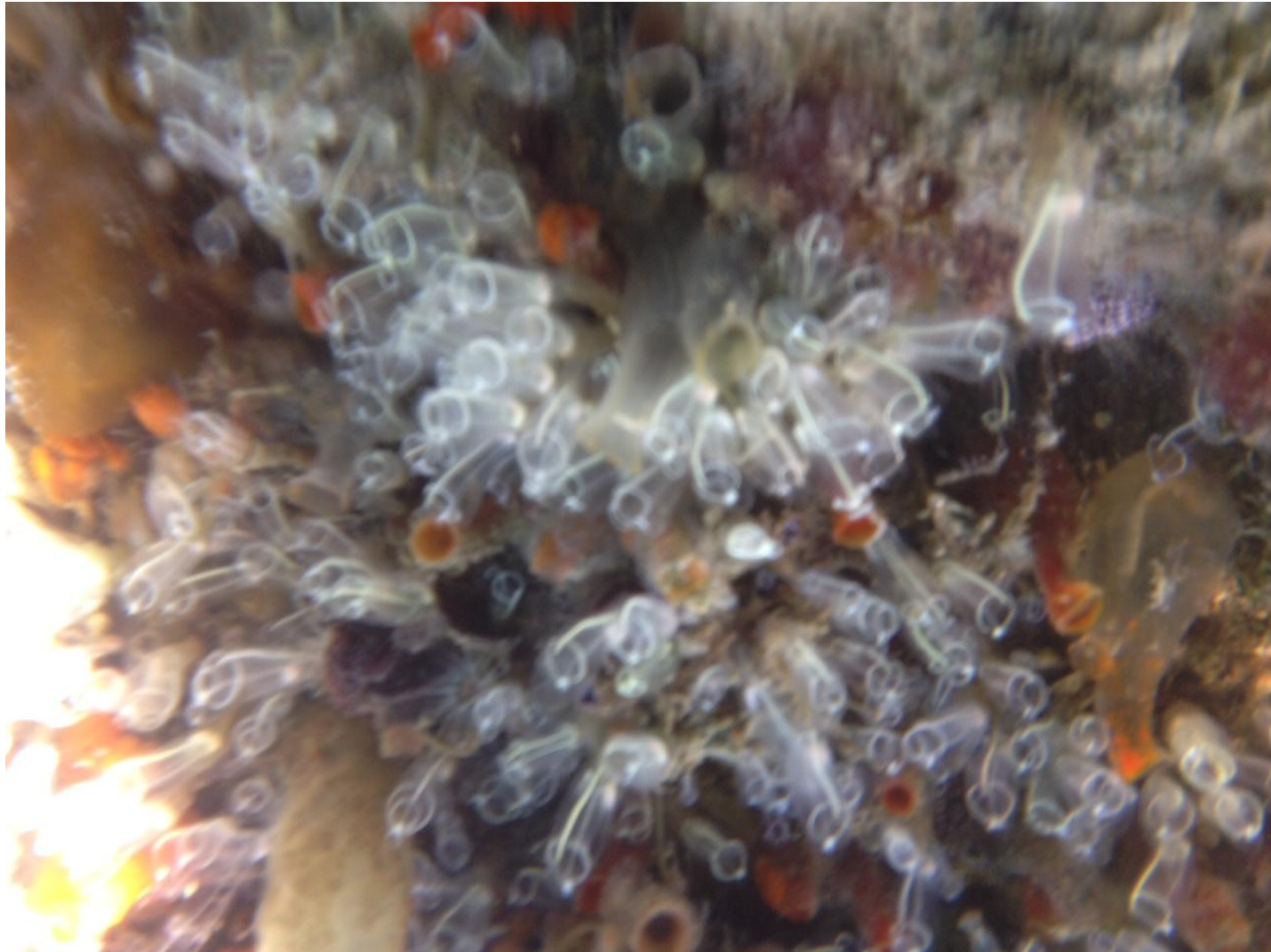
Styela clava





LIGHTBULB ASCIDIAN

Clavelina lepadiformis



NEW NON NATIVE ORGANISM

ECTOPLEURA ??

Mana Marina



... ZZ Top



WRAPPING MARINA

Mana Marina





BEFORE AND AFTER WRAPPING

Before



After





WHERE TO FROM HERE ?

- Continued education of vessel owners
- Monitoring of all new vessels to Mana Marina
- Continued building of relationship with Bio Security Partners
- Monitoring of marina structures



THANK YOU

ANY FURTHER QUESTIONS