

Sea Urchin Zone Council Research Subcommittee Meeting February 24, 2016 in Brewer, ME

DMR staff: Trisha Cheney, Carl Wilson, Robert Russell, Les White, and Rustin Ames.

SUZC members: Teresa Johnson, Steve Eddy, Tracey Sawtelle, Dean Norris, and Chuon Muth.

Public: Jimmy Ackley, Alice Ackley, and Kim Ovitz.

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Meeting commenced at 2:16pm

C. Wilson: I'm the new Bureau of Marine Science Director for the Department. I took Linda Mercer's position. Prior to this position I was the lead for lobsters for the last 16 years or so. I shared an office with Maggie, so tangentially I heard a lot of the urchin conversations over the years. As part of this new position I have been looking into what is going on with the other fisheries. One of my tasks from the Commission was to look at where the resources are for fisheries in the future. So that is where I come from. So what we are hoping for today is to start a conversation that has been circulating around within the Department. We have had a couple of smaller meetings with Joe [Leask] and Dean [Norris] to start talking this through. The idea is, from an outsider looking in, that the urchin fishery in difficult position right now where landings are stabilized, but low compared to their past glory at one time. From the conversations, the landings are at a tipping point as the production that is coming out of the resource right now is at a critical juncture with processors not being able to take any less product than they have right now to be able to process. You have an ageing fishery that is starting to move through. Maybe with my arrival we can have a fresh start to some of the conversations. One of the things that I know is that Steve [Eddy] has been involved in the transplanting project and I know Clint [Richardson] has as well. So there seems to be a number of questions. One, can the resource rebuild to what it once was? Are there other strategies we can think about for management of the species? What is the future of the fishery? One part in that sequence of talking it through is the idea of a closed area that has come up and how it could address some of these questions.

S. Eddy: When you said you have been talking to Joe, do you mean Joe Leask?

C. Wilson: Yes. My involvement from urchins was limited to when I was an intern with Bob Steneck back in 1995; then I quickly moved on to lobsters. My direct involvement with urchins was limited from there. Within our internal conversation there seemed to be enough questions out there that could be addressed within a closed area in an approach that wasn't attempted in the past. My understanding is that past closed areas were very small, they may have been poached, and they may have not been productive areas. In order for us to understand the underlying dynamics of the resource and set us up for future conversations, we need to understand what removing, what fishing does to the resource. So, what we came up with through these meetings are some objectives from the DMR for this closed area. [Appendix A for Carl's handout]. One is rebuilding the resource because we are at this critical juncture of the volume that the fishery needs and the volume that is actually there in the resource. We want a certain level of resource, to rebuild the resource. Maybe not back to the peak, but certainly substantially higher than what it is today. We feel there is a future in this fishery. My conversations with Maggie and others when urchins first came on the scene in Maine was that there was a feeling that we can't overfish these. There are so many out there, let's just get rid of the urchins. What we want to go forward with is that we feel that this is an important fishery for the coast of Maine. This is an important resource, an important fishery as well. A closed area can start that discussion – can urchins recover, can the resource recover? Then we can address some of the current questions that are out there, such as the project that Steve and others are working on around Boothbay [Cat Ledges Project]. So, we came up with some of the characteristics of the closed area. We would like to find an area that represents an area of current productivity. We don't want to close an area that is flipped or has no current fishing activity in the past 15 years, such as southern Maine. We want to find an area that has somewhat of a current fishery still harvesting. We are throwing out for conversation an area that represents 5% of the harvest in Zone 2. That this area have a mix of habitats and exposures and essentially be an area that would have the ability to recover to something like it would have been. There had been some conversation around do we match this area to one of the scallop rotations, or a mixing of the two. There have been some conversations around the impact of doing that. But really the scallop rotation is not the driving question, nor

should that drive the discussion about this area. That is the general characteristics of a closed area that we internally have been battling around. And then questions that we think a closed area might be able to answer or address. This might have broader implications for the resource and the fishery as a whole. What would we see if we closed a relatively significant area relative to changes in biomass, feeding fronts, lateral areas versus changes with depth? Do we see changes within Robert's diver based survey? Or more importantly, what does the industry see as positive changes, if we were to close an area, and how does that reflect where we can go in the future? Is there an opportunity to monitor roe content and see how that changes over time? And really from the industry's perspective, what are the characteristics to satisfy rebuilding for the industry? More so what might be different from what our shop might see as a rebuilt resource - what would that look like and would it conflict with what industry would see as a rebuilt resource? Such as if we reestablish barrens everywhere, does that change the quality of the product to be harvested? So those are the basic questions around a closed area. And then with the limited ability to throw a lot of money at this really, especially internally, what we are proposing to do is hopefully have industry guide us in ticking off what our priorities under research would be. Essentially the ideas we have been throwing around are to intensify the DMR survey in the area. So to monitor that area in a way that is standardized, how it has been done over the past 15 years. But really, in that survey, we are not monitoring some of the characteristics that industry is interested in. I am talking about roe monitoring during the year, developing some sort of industry based survey. That industry based survey would be a way that if you are a member of industry and you are scouting, how do you scout an area and is there a way to monitor this area relative to the way that industry scouts an area? That might provide another tool that would objectively say positive or negative; that there have been changes to an area. We could increase our settlement monitoring, something that the Department has not been doing, but it is something that Larry Harris has been doing in eastern and western Maine. We would like to continue the conversations around transplanting and bulking up, manipulation of the resource and habitat. Also, we want to expand on the work that Steve and others have been doing in the Sheepscot. Finally, we want to experiment with the fishery in that area. It felt like in our internal conversation in order for us to move forward knowledgeably and rebuild the resource and take us down a path that we don't know what the outcomes may be, being in a position of suggesting what might be draconian measures to the industry right now, moving forward this type of work would set the stage for future conversations. That's the nutshell of what we have been talking about internally for the last 6 month or so. Now we want to shop around more and see what you guys think about this. Is it something that we should pursue? We are not wedded to what area needs to be closed. We want to make sure that it has some characteristics of what we mentioned earlier. It is an open conversation. We want to be looking forward with this fishery.

S. Eddy: So, if you choose an area would it be based on Roberts' dive surveys so you have a track record of what has gone on there?

C. Wilson: I have a road map of where Robert has been in the last couple of years and the associated landings in that area. We were hoping that we could use Roberts' survey as an indicator of what the resource is doing in terms of size classes, algal cover or other characteristics that can be pulled out of the survey. Then we want to find the sweet spot where there is still some fishing going on, but we don't want to displace a large portion of the fleet - so an area representing 5% of the landings. Not from Cobscook Bay, we don't want to do this in Cobscook Bay. We want to have a broader conversation.

S. Eddy: So roughly 100,000 lbs. 5% of Zone 2 landings?

D. Norris: So you want to limit the impact of the closures to a maximum of 100,000lbs. lost harvest, hopefully getting a lot more positives than negatives.

C. Richardson: So limiting the other areas from additional harvest.

C. Wilson: So, closing 5% and pushing that into the 95% of the other areas.

D. Norris: One thing we want to be careful about is how many divers we push.

C. Richardson: Yes, they would be pushed to other areas. Do you have an idea of where you would like to look at for the closure?

C. Wilson: Internally, based on a lot of what Robert was saying, we were thinking more around Penobscot Bay area. But in our conversation with Dean we had some strong reasons as to look at an area around Petit Manan.

C. Richardson: Is that area being fished?

D. Norris: It is being fished.

R. Russel: You really want to look at if there is still some larval supply in an area? Is there a conveyor belt? We want to look at replacing the baby conveyor belt. Something depending on what questions you want to look at and what can be successful.

C. Wilson: Look at the graph I just handed out. The pie graphs represent Roberts's density survey and the pieces of the pie represent undersized, legal and oversized. Some areas have more sublegal sizes, the size of the bubble represents the density. Maggie then took landings from harvester reports which have locations associated with them, and that is along the bottom.

C. Richardson: How long has Zone 2 had harvester reports now?

T. Cheney: I think three years. At least a few years now.

C. Wilson: Has it only been that long?

T. Cheney: Yes, it was only recently put into place.

C. Richardson: Zone 1 has been doing it for longer.

C. Wilson: We were just trying to think of new ways to look at this data. So Maggie plotted up aggregate data, so we wouldn't put confidential data up there. So we took the longitude of the location and put the percentage of landings for all of Zone 2. So you can see with the bars at the bottom the percentage of landings from that longitude so you can get a general idea of where the landings area coming from. Conceptually, what we were thinking was that if you added them up in an area, how many bars does it take to get 5% of Zone 2 landings, and then we could focus on that area as a closed area.

C. Richardson: That is going to be a large area.

C. Wilson: Yes. It is a mix of trying to capture where fishing is actually going on.

C. Richardson: The next question would be how many people fish in that area.

C. Wilson: That is a little harder to get at, but we can figure that out. Maggie has worked through some of the scallop [rotational] areas to see how many pounds and how many fishermen are working in those areas [presented at the last SUZC meeting]. It is possible to get. Every data point associated with these bars, we know who it is and what day it was harvested, we can get those numbers. It will impact some people.

S. Eddy: Are you expecting to see the numbers increase in this closed area? Are we expecting to have higher settlement in the associated areas? What exactly are you expecting to see with this?

C. Wilson: We are talking a relatively short time period for this; we are not talking a permanent closure. If some of the goal is to broaden and reestablish a feeding front in this area, does that change were the biomass is, does that change the settlement patterns in the area? Are you able to manipulate, or bring in urchins or do a transplanting experiment? Can you create a barren or a feeding front that wasn't there before? Are you able to manipulate something and see a change in settlement or settlement success over the course of that closure? If you are manipulating the urchins are you able to see that in the fishing – have you increased the roe content? Does that have ecological consequences that might benefit the resource as a whole? I think it is all out there. It is not so much trying to create a source, a larval source for the state or region. I would say it is more evaluating what relaxing that fishing pressure would do and then trying to move that question forward. For example, if we see no change in the resource. Fishermen go and evaluate the resource and say it looks the same to me. Then we are not learning anything from a closed area. To me, that says that maybe the approach of backing off fishing to try to increase the biomass is not the approach. Then we can continue to search for something else.

C. Richardson: What are you thinking? A year or two?

C. Wilson: I think it's up for definition. From what I understand, when you guys closed Whiting & Dennys Bays, you have some unintended consequences from that closure. So, I don't think we want to put a boundary on how long this will be. I think it is something that the group should allow to evolve as we go along. If the surveys come back and say this is exactly where we don't want to go, such as in Whiting & Dennys Bays which I understand that the biomass did rebound, but they were of very low roe content. So that didn't take it in the direction that was hoped. Then that is what our continued monitoring and evaluating would tell us.

C. Richardson: That is part of the reason I was worried about it. A lot of the places above North Haven have gone back to junk urchins, because there are so many there. There is nothing to eat, so they can't get good. There are too many.

C. Wilson: So that is what we want, what part gets the negative check mark? Is it the resource is rebuilt? So from a survey perspective, things are looking better, but from a fishery perspective, things are looking worse.

D. Norris: That would be a perfect place to take and pull some biomass out as it is not commercial.

C. Wilson: That is where this has to be your project just as much as the Departments as the industry has to see this as successful. What is your measure of success? How do you evaluate an area when you do your scouting dives? Is that something that we can incorporate into a survey and balance with Roberts annual dive survey?

R. Russell: I think when setting your goals, you have to think for Whiting & Dennys Bays, it got added on to a scallop closure. And we just did a couple of visits to see how things were doing, but we don't look at roe count to see how things are doing in the off season. It was riding along on a scallop closure, and when it got reopened we all went crap!

C. Richardson: Scallops and urchins are totally different animals.

R. Russell: There were no criteria, like let's create an urchin closure for these purposes. It was more like let's close it for scallop dragging, and then close it for urchins too.

D. Norris: Just before it closed there, it was a matter of chance that babies settled out. It was perfect timing. We want to make sure we don't reproduce what happened in Whiting & Dennys Bays. Part of the problem is that the science is driven by the mathematical model of biomass. If you change biomass here, it will affect the whole mathematical equation for the whole coast. When we harvested several hundred pounds of low quality urchins out of Whiting & Dennys Bays, it nearly cost all of Zone 2 to loose days because of the effect on the model losing that biomass. It was the tail wagging the dog. It would have severely impacted the industry. You have to understand how the model works and how it doesn't work. Since it happened I have known that is wasn't right what happened there. We can't let it happen elsewhere.

C. Wilson: So Dean, trying to have this conversation beforehand is very important. Saying we move forward with this, we have to have the courage to pull the plug on it. If the large group of 'we' says this is not what we want to do, if the cost is larger than the benefit.

D. Norris: All it would require in Whiting & Dennys Bays is a simple tote limit. Then it wouldn't have affected the model in that way. Then we could have benefitted without the danger. But nothing was said to anybody, it was just said go in, nail it all and that was the rules that were set by the DMR that led to a real problem with the models equation. I forget the name of the model.

T. Cheney: Yong Chen's model.

D. Norris: Yes.

R. Russell: We don't manage solely based on the model.

D. Norris: Not solely, but it sure as heck came up after and it came into play in my mind. The model doesn't distinguish a whole lot of junk in that hole from the whole zone. That is inaccurate of how Mother Nature works.

C. Wilson: So I put in here an experimental fishery. Trying to view things a bit differently than the incentives or constraints that you have right now. Without trying to pull everyone by the nose, let's let the dog try to decide what it wants to happen.

D. Norris: Yes, just being aware of how it works. I don't think that shutting down elsewhere will have the same result as Whiting & Dennys Bays. But simultaneously we have some good production in our survey; things are looking good. But Whiting & Dennys Bays were entirely swamped with baby urchins prior to it being closed and I doubt you could find that.

R. Russell: I would also never recommend using Cobscook Bay as a model for anywhere other than Cobscook Bay. It is a different world. The open coast is different. This is also Carl's example of western Maine. We know there is not a lot of fishing pressure there, but things have changed. We have lost that area. So, somewhere between Small's Point and Quoddy Head, there should be a place that we can figure out.

C. Wilson: And it is driven by the belief that there is a future in this fishery. The stability and lack of change, from a philosophical perspective, the fact that there are no licenses being issued in this fishery - that is a problem for this fishery. The real radical side of me says that is not a fishery management plan, not letting new people in.

D. Norris: There are three challenges with this. The first is getting people to accept the place that is closed - finding the spot. Number two is figure out the incentives to get people to volunteer their time. It is expensive to work out there, whether it is wear and tear on our gear, fuel. The third challenge is the science and what we do on the bottom once we got people agreeing to work, transferring junk urchins from close by. So it is three challenges, three steps.

S. Eddy: I would add a fourth challenge, is what we are going to do with that 100,000 lbs. of effort? What are you going to do with that on either side of this area? Are we going to wipe it out? The guys that are fishing that area now are going to wipe it out.

D. Norris: One of the areas has got an active urchin community right there and it is on the edge. It bothers me because if the closure includes that particular town, that will encourage people to move to other ports. Whereas if the edge was tweaked a little bit it would encourage them to stay. In one of the areas, which would be Winter Harbor, a lot of the guys who work there, when the weather allows it they move west. The closure would be to their east. But if the closure includes their town, then they will move elsewhere as their port would be closed. I would not want to encourage people to move as you don't want to add pressure to areas where there is a system of guys working their spots. It would throw an unknown variable in there.

S. Eddy: If you are looking at these [landings] bars, and take enough of them to make up 5%, logically if I was fishing on one place and move to another, do you risk accelerating that trophic flip?

D. Norris: Hopefully it would be limited to a 5% impact, limit the damage.

C. Wilson: We have certainly seen that in scallops, you close an area and you move people into another area. So the idea of 5% that would go to the other 95% of the area that would remain, yes, that is a concern, an issue and something that we should try to quantify.

D. Norris: It is about 10 guys that would be moved.

T. Smith: We don't want rolling closures [just entered conversation].

S. Eddy: That is not what we are talking about.

[Group brought Tristan Smith up to speed on what had been previously discussed as he joined conversation late and he expressed support for using LPAs (Limited Purpose Experimental Aquaculture Lease) to undertake work]

J. Ackley: You were talking earlier about transferring urchins from one place to another. They already tried it in Lubec and they didn't have really good luck when they brought them from really deep water.

C. Wilson: From what I understand, there were some negative outcomes from some of those projects. But, we still have people practicing it and moving urchins right now. That is why the Department is trying to do what it can to help with Steve's project [Cat

Ledges], whether it is an outright manipulation, farming or however you want to explain it. If we are trying to change things and there is something that works, then why would we limit the conversation? If people are doing it successfully, then we don't want to limit that conversation.

J. Ackley: You already have some information from fishermen who took the time and did it on their own, so you have some kind of information whether or not you should take a deep water urchin and put it in shoal water as it won't survive. Speaking of the roe content, we would go into a place like Whiting River and it would be junk. But the more guys would get into an area and as you go back to those areas, the quality is so much better. If you tried to get them too thick in one spot they are no good.

C. Wilson: That is part of the conversation, everyone has different objectives. From a Department perspective, I looked at the information and this seems like we should figure out a way to rebuild the resource to some previous level. But when you do that, it means different things to us in Boothbay, different things for Augusta, different things for fishermen.

J. Ackley: Seven boxes of 13% and then you have 25 boxes of 7% and the next day you go to sell them to the dealer and he goes to you I am not going to buy that junk. Quality is the thing. You have garbage fishermen out there that are happy doing it.

A. Ackley: It doesn't make for a happy wife.

T. Sawtelle: We moved some urchins from 140 feet and it was three years ago, and dumped in an area with a gentleman's agreement to wait until Christmas, but some guys went in early. But you could tell they were the deep water urchins as the spines were brown and the quality was really good. Now the experiment that was done a long time ago that was lied about so much it was crazy. People saying they put in totes and they didn't. Supposed to dump between two buoys, but a lot dumped in other areas.

R. Russell: Ultimately, it didn't matter how many were dumped, we only monitored the ones dumped between the ropes. I was asked to do the project, my very first project at the state 14 years ago. Cobscook Bay fishermen moved a lot of product around and asked me to see how they survived. We watched them day to day over a month die due to handling stress. The stuff that was there went from 3% to 20% - it was amazing. The question that has to be asked is do you want to harvest deep water urchins and have a lot of them die? Or do you want to get a fraction of them and get a great price? My question at the Downeast Forum was do you want to leave these low quality, 3% urchins in a nice tight aggregation that will reproduce and reseed, they are useful in that density, but they are not economically useful to you. You can mix them and bulk them up, but be aware that you will lose a large chunk of them because you are bringing them from deep water, they are dragged and you are still handling them. That is the only thing that you were doing there. Question was do you want to fish them up and bulk them or leave them.

C. Wilson: Tracey, where were you going with that?

T. Sawtelle: Was just that we have tried it. Once was in the spring and once was October.

C. Wilson: So, there are other fisheries around the world that move stuff around. That apparently is going on right now in the industry, whether it is legal or not, it is going on. That was one of the ideas of having this closed area was trying to advance that idea a little more.

D. Norris: What we learned is that a lot of guys keep their cull racks with the smalls with the seaweed and at the end of the day you put them in a spot that will do well. Many times we come back later and they are beautiful quality urchins. Many times you can't do it if there is any crab activity as there would be 100% die off. It can range from total failure to total success. But it is fun to find urchins that came from a culling rack, you can totally see it. No urchins anywhere, and then you can see where they were dropped and they gained a half an inch over the season.

T. Smith: I think DMR should do some work to identify where there were once good sea urchins.

S. Eddy: I would like to see the focus on another project, similar to the Cat Ledges Project, in Zone 2 with another group of fishermen. One of the advantages that I see with that is that fishermen are competitive; if one group does something well, the other group will be pushed to try as well or at least match that. The other advantage is that you would have another spot to compare Cat Ledges to.

T. Sawtelle: I have an awesome spot that has all kinds of kelp. But once you get your fingers it in [DMR], you'll never let go.

C. Wilson: One thing is identifying good spots. We have our dive survey, but what we think are good spots may not be the same as what the fishery is looking for.

T. Smith: You have to call some of those guys who dove Zone 1 18 years ago and go down there and play around. Then let a few guys do what they want under an LPA and not charge people the first few years, and after three years give them the option to do an aquaculture spot. We also need to start using cages. I don't understand why DMR won't let people do it.

D. Norris: I think they would let people do it.

T. Smith: The elver industry got started because DMR let Bill Sheldon do whatever he wanted in all the rivers in Maine to try to catch elvers. So DMR should let people go out there and experiment.

C. Wilson: So when I came on, the Commissioner asked me to look at where there are opportunities. It seems like urchins are at a critical point that infrastructure has declined, fishermen are getting older and the resource is stable but considerably lower than what it once was. So, instead of advocating for just setting a hard TAC and do X, Y and Z, we want to know what a measure of success is. What can the Department learn from this? You can do everything that you are talking about in an environment where you would have it poached out or threats of marine patrol coming in. We could address several questions. Otherwise, we can continue grinding away on how business is currently being done. But from an outside looking in it just feels like there is a certain tipping point that this industry is at.

T. Smith: I advocate letting people do this stuff and start some LPAs. Diving and boating is expensive. Infrastructure, more urchins on the block, you let people experiment and they have to divulge all their techniques so it can be recreated. To shut down an area, DMR knows where people are diving; I really don't think that is a good idea, especially in Zone 2. In Zone 1 there are spot you could.

C. Wilson: But a lot of those spots in Zone 1 haven't been fished for 15+ years.

T. Smith: That is why you won't have a problem.

T. Cheney: But the idea here is to close an area that has something in it, not an area that is commercially extinct. The Cat Ledges Project is addressing taking an area that is commercially extinct and bringing it back. The idea here in Zone 2 is to take something that represents 5% of the landings, so a minimal take, and see if we have an area with different sized urchins and see if we can do something there.

D. Norris: Understand that if an area is improved then it will go back to the fishery.

T. Sawtelle: But what you don't understand is if you have 6 people fishing that area and close it, then boom, you will have 60 people fishing there. That is the problem!

C. Wilson: This is not taking us down a scallop rotation conversation. It is trying to see if there are positives that can be gained from the resource.

T. Sawtelle: We did that with the Whiting River. It was supposed to be closed for 2 years and that turned into 3 years.

C. Wilson: Then give us the chance to adapt. That did not meet the objectives. So, the whole idea is to not introduce scallop rotation on the urchin fishery. It is to say that if we are going to do something for urchins, why not figure out from everyone's idea of what future stuff we can do, throw it all up at the wall to see what might actually benefit, instead of limiting catch or shutting it down.

T. Sawtelle: I wouldn't want it done in my area for the simple reason that it brings more people.

T. Smith: I don't like the idea at all. We should put the proposal forward and let people do it with LPAs.

C. Muth: The problem is it will create a war.

T. Smith: All urchins are protected.

C. Muth: No, you put 100 totes in that area and then someone else goes and fishes it.

T. Sawtelle: It doesn't take many people.

C. Muth: You should let the processors handle that part and do the experiment and then let them buy that product back. They can create the group in an area, and only that processor that did that project can buy those urchins. Processor would spend their own money to buy the boats time to do the experiment in that area to move the urchins in that area, say 10 guys. And only those 10 guys can fish those urchins and that processor buys them.

D. Norris: So you are going to privatize those junk urchins?

C. Muth: They are the ones who would put them there.

D. Norris: The product on the bottom belongs to everybody.

T. Smith: Change the \$100 fee of the LPAs and only charge after three years.

S. Eddy: LPAs are tiny.

T. Smith: Then make it bigger.

D. Norris: 30' X 50' is four LPAs back to back, it's a postage stamp. It is tiny.

T. Smith: Up it to 1000' each so 4000' total. State of Maine should let the first 20 guys have them for free for the first three years and there is an experiment.

D. Norris: What the state is proposing would be absolutely free. What you are proposing sounds expensive to me.

T. Cheney: We have found that smaller spots in the past are not as successful.

C. Wilson: A reasonable objective would be do you feel that the total biomass of urchins out there is adequate to support the fishery as it is. If it is not, should we try to increase that biomass?

T. Smith: When you go back to the office tomorrow, add up all the dragger and divers and their landings and then compared to 1994 – everyone is catching the same amount of urchins, there is just not the same amount of people going. Everyone's getting the same amount of urchins pretty much.

R. Russell: That is not correct. The catch rates have come crashing down. Zone 1 came down a long time ago. CPUE has dropped.

J. Ackley: There are a lot of cable areas along the coast. They are already closed to draggers, but could also be closed to divers. They are monitored by not only wardens, but also people on the island as that is their power source. You could use as dual purpose; in Jonesport one side is scallops other side is urchins.

C. Wilson: The reason we are trying to advocate for a larger area, is that as a diver if you are scouting an area and determine if good or bad bottom, if closed, does the area change. And is there something that we have learned in that which could inform how we move forward.

J. Ackley: I have some diver friends who have dove a cable area for a whole season. Ideal spot for urchins.

C. Wilson: We are thinking that a larger area would have broader implication than a smaller area.

J. Ackley: I understand that, but they are areas that the only folks who can legally go in there is divers.

S. Eddy: One of the challenges of a larger area is that it will be difficult to interpret your results.

C. Wilson: So, that is what you have to involve and know. You can't make broad assumptions as each area is unique. You have to know what areas are doing better and what areas are not and is there something to be learned from that.

S. Eddy: One of the things I like about that is that the large areas have a range of habitats in it. So you will have areas with thick kelp beds, others with feeding fronts. It would give you an opportunity to move some urchins from one area that has plenty to another area that does not and look at changes while protecting the area as a whole. I think monitoring and interpretation is going to be a big challenge.

T. Smith: Just get the 10 people with LPAs and they know something good is happening and they would be give the state that information for free. If they can rehabilitate areas, isn't that good? Then you get a method down with these 10 people. I don't know why the state didn't do it 8 years ago when I brought it up.

T. Sawtelle: I remember you talking about the same idea last year, and the year before.

T. Smith: Go tell your boss, he knows Tristan Smith, he knows who I am.

T. Cheney: Yep.

T. Smith: It's a good idea; think about it on the way home tonight. Call me up.

C. Wilson: To bring it to a close, we wanted to bring this forward, it's an evolving conversation. If the Department was going to do something it would be by rule and it would be by next season.

S. Eddy: But not without more discussion.

T. Cheney: No, we will carry this discussion over to the next Research Subcommittee meeting and hopefully both Carl and Larry will be able to come to that meeting. So we will take a five minute break before the full council meeting. Thank you Carl. Thank you everyone.

Sea Urchin Zone Council Meeting

DMR staff: Trisha Cheney, Carl Wilson, Robert Russell, Les White, and Rustin Ames.

SUZC members: Teresa Johnson, Joe Leask, Steve Eddy, Tracey Sawtelle, Chuon Muth, Dean Norris, Atchan Tamaki, Duane Carver and Chuon Muth.

SUZC members not present: Jeff Edwards, Larry Harris and Mark Nickerson.

Public: Paul Cox, Bill Sutter, Jimmy Ackley, Alice Ackley, Joe Grego, Sinoun, Kim Ovitz, Ben Sarry, Raymond Huckins, Barry Huckins, Aaron Gilpatrick, Keith Evans, Jim Taylor, Mitch McConnell, Mitch McConnell Jr., Chenda Dour and AT Dour.

Meeting commenced at 3:45pm

Introductions – Council & Audience

J. Leask: This is the first of two meetings. At the next meeting we will actually set the season. Everyone introduce themselves.
[Introductions]

Approval of last minutes

T. Sawtelle: On the back the 10th page on the minutes were I said what is wrong with Monday, Wednesday and Friday. I actually said what is wrong with Wednesday, Thursday and Friday.

T. Cheney: I will correct. There was also a correction to the spelling of Tsujji auction.

T. Sawtelle: motioned to accept, seconded by C. Richardson. *Motion passed.*

DMR Updates

T. Cheney: At that last meeting Zone 1 divers asked if they lowered tote limits what kind of days they could get as an exchange. Maggie ran the numbers. [Appendix B]. Ran for divers and draggers and

R. Russell: Since not everyone is fishing all 12 trays, the number reflect the actual equivalency based on current catches. So for 5 extra days you would have to go to 7 trays. You can see the different equivalencies at different trays/day levels.

T. Cheney: At the last meeting Brian Preney had asked for parody between the two zones for tote limits, so at 7 trays you would get 5 more days as Zone 2 is at 7 trays.

J. Leask: We can continue that into season setting season discussion.

T. Cheney?: I sat down with processors in Portland. Currently challenges are export issues with US Fish & Wildlife which may have caused bottlenecks in December and why people couldn't move product in December. Atchan and Joe [Leask] went to Washington DC to testify on these challenges they are facing. Joe now has attention of Director Woody who wants to better understand our issues and why product is not getting to market on time.

A. Tamaki: USFW think sea urchins are an endangered species. We are trying to move them out of there.

S. Eddy; What about trying to classify urchins as shellfish.

J. Leask: That is what Atchan and I went to testify on that to get it in the same list of lobster and other shellfish. The bill itself would remove urchins from being inspected. Atchan spoke endangered species list, we don't want them on that list. I know have a direct line to Director Woody. NOAA is going to take over inspections. There is a new system that all species will be on worldwide. Atchan or Chun will be able to ship a product and track it. Hopefully it will alleviate the paperwork.

T. Cheney: There are some efforts to try to ease burden and costs on accessing markets in Tokyo. At that same meeting we did discuss the calendar and there remains some division between the sets of processors desires to have a spread out 5 day season or a compacted 3 day season. The Department would like to again recommend a compromise 4 days season, so status quo of what was negotiated last year. Significant amount of processors are being squeezed by there only being a limited amount of product coming in and they are being squeezed by overhead and costs associated with that. Need to keep in mind that scallop calendar will have the same pattern as Mon-Wed/Thurs which is the same as past couple of years.

C. Muth: Can we not overlap with the scallops and have later days in the week to fish?

T. Cheney: That is up to you. Scallops always start December 1 and go Monday through Wednesday/Thursday.

C. Muth: I know December we cannot as we need more days, but after December we would like to not overlap with scallop as they are bringing in bad quality urchins.

A. Tamaki: That is exactly what I have in my calendar so it does not overlap with the scallop season.

C. Muth: These last couple of years we lost our fishermen to the scallop fishery. People away from home down in Lubec cant switch their drags, so they fish for scallops. We lost a lot of market share because our price is high. It is not be that doesn't want to pay, but other countries are lower and we have smaller and smaller markets. They don't want to buy from us.

C. Dour: I don't mind if Zone 1 and Zone 2 days overlap.

T. Sawtelle: What days do the processors process?

A. Tamaki: We do it every day.

C. Muth: Urchins can keep at least 3 days in a cooler. So any day is fine with us. We just spend more time out there trying to get them. We bought two days and came back and then had to go back down again.

J. Leask: So it would be better for you to have the days packed together?

C. Muth: Yes. I know it has to be a compromised calendar.

T. Cheney: So before we get into an in depth discussion on the season, we did have a discussion on the Zone 2 closed area in the research subcommittee meeting as well as some talks with Joe and Dean and internally. We are going to carry that discussion over to the next Research Subcommittee meeting as we want to focus on setting a calendar. We will come up with a draft today that people can look at and finalize in March.

S. Eddy: Summarized results of Research Subcommittee meeting [see above].

C. Wilson: The overarching point is that Department feels there is a future for this resource and the fishery. Some of the potential actions that could be taken, the outcomes are not know. So the idea that the area would allow some discussion on outcomes of different scenarios.

S. Eddy: Zone 2 fishermen would have to buy in. The Department doesn't have much for additional resources to put into monitoring. Would help if fishermen could help assist. I like that we do have the Zone 1 Cat Ledges project that we could do a Zone 2 comparison and motivate competitive instinct to make things happen, and learn from it.

J. Leask: Cat Ledges has been at a standstill. Water temperature as of January 9 was over 42 degrees and crab activity high. Yesterday diving and found our first blue urchin. We harvested urchin at 9am and covered it in seaweed in a tote and out of water it last 6 hours and put in tank, within 5 minutes it was anchored in tray. Still had a lot of strength to make a recovery. When talking about moving urchins, that showed me that a limitation I thought existed but wasn't really there. Clint and I have been bulking up urchins. But having urchins out of water for 6 hours offers a lot of potential for what Carl is proposing with closures.

S. Eddy: From an urchin hatchery conversation, I am interested in breeding that urchin for projects.

T. Cheney: For tracking it, that would be good way to identify the hatchery urchins.

T. Smith: 10 years ago went diving and drove to Benny's in Waldoboro and he had too many. Put urchins in cages with seaweed and harvested and sold them and they had better percentage. 10 trays and we barely lost any.

D. Norris: I kept 14 totes over two weeks once.

2016-17 Season Discussion

J. Leask: Zone 1. We only have Clint here for Zone 1 harvesters.

T. Cheney: We did have a lot of input from those guys at the last meeting.

C. Muth: I would like to recommend letting the markets set fishing days. Everyone is focused on markets and I don't believe fishermen have more knowledge than the guys who sell the product. So we should be the ones who set up fishing days.

D. Norris: Both fishermen and processors have equal say. I don't think right to take that away.

C. Muth: We know when good market is.

D. Norris: We do. Atchan and you discuss that with us.

J. Leask: Do you have days that you would recommend?

T. Cheney: I have his recommendations [put it up on projector – all Zone 1 early days in September].

D. Norris: At the last meeting I though you said you were having issues with quality in September in Zone 1.

A. Tamaki: That is why I put all my Zone 1 Early Dive days in December and January.

D. Norris: Yes, but they are not here to change it. It is an issue.

T. Cheney: Atchan's Zone 1 early dive calendar had Thursdays and Fridays in December and January for Zone 1 Early Dive.

C. Dour: You can shut me off from September.

J. Leask: We are not shutting it off.

A. Tamaki: I put September in Zone 2.

T. Cheney: Atchan had proposed Mondays and Tuesdays in September in the Zone 2 Early Dive calendar because of the quality concerns.

J. Leask: The proposal was out there to have Zone 2 dive early in September. But I would like to have Zone 1 decide and then adjust from there. Clint has spoken to a few Zone 1 guys. I have only spoke to Jim Colling and they wanted to leave September as is.

C. Richardson: I know a lot of guys in Zone 1 late would like the days moved into January and February to get even better quality. At least have some product in September because the processors need it.

C. Muth: September is the most important market. We show off with our product, all overseas market show off their product.

J. Leask: Clint – how do you feel about being out of September?

C. Richardson: Personally I don't care. We could get a better quality in December, but we get a better price in September.

J. Leask: This year was an anomaly. We stretch the days out as much as possible to give everyone the best chance to make money. Yes. Percentages in Zone 2 right now are better in September, but doesn't mean it won't cycle. We have to have a September market, a necessity. Comes down to what Zone 1 wants to do?

C. Richardson: Another question is what does Zone 2 early want to do? Do they want to go to September and stretch their season out another month?

J. Leask: Justin Gebo called me on my way up here, he is a Zone 2 early diver and he wants September, but he doesn't want to dive in October because he goes to Alaska.

D. Norris: Michael Smith also wanted September in Zone 2.

C. Dour: No one buys more Zone 1 urchins than me. What I see this year is Zone 1 they have a lot of good urchins. But in January nobody wants those urchins and in February the urchins are spawning. What is the point of moving the days? I am buying drag caught eggs.

A. Tamaki: I don't think they are spawning.

C. Dour: Yes, they are spawning.

C. Muth: Zone 2 are spawning as well.

A. Tamaki: But we are talking about Zone 1.

C. Muth: Zone 1 is worse.

J. Leask: I am diving and I have seen urchins spawning. Late season has historically been later months and on average been better later. This year is a warmer winter than we have had in a long time.

C. Dour: Last year I bought, previous year I bought. If you can find urchins that pack out more than 10.5% from Zone 1 draggers, you come tell me.

J. Leask: Did you buy Zone 1 drag urchins last year?

C. Dour: Yes, for the last 5 years.

J. Leask: But last year in comparison to this year is what I want to know.

C. Dour: Last year it was better, 12% urchins. This year is worse.

J. Leask: Historically speaking, January and February urchins are as good as they are going to be. March is questionable. Some years they are good, other years they are melting. For Zone 1 we need to steer clear for March. You don't like January and February for Zone 1. Atchan's proposed season has early season in December with some January. But I know Mark said he wanted to dive January and February. Maybe we look at the full moon cycle as you know they start to melt then, so schedule around that. They were good and solid right before the full moon this cycle and after are melting. After the full moon they solidify.

C. Dour: That is true.

D. Norris: It is complicated how they spawn.

C. Dour: In Penobscot they have pretty much spawned out right now, worse than last year.

J. Leask: Water is warmer this year. Crabs were active until January this year. Last year they were asleep middle of December.

C. Dour: I disapprove of moving diving days to January and February. It doesn't make sense.

A. Tamaki: If you think the best month is December...

C. Dour: Not really, maybe for you as you have domestic market. For us that is the only month that people want urchins and that we can process.

A. Tamaki: Yes, but right now it is the high price.

C. Dour: Yes, that is true. There is no Korea, no Russia; there is no Domestic West Coast. Of course our urchins are up. A few years ago the price went through the roof.

A. Tamaki: Then don't you think that is a good month [February]?

C. Dour: No, for you maybe.

D. Norris: I am not in Zone 1, but it seems like the biggest money is in December right now. Would you advise them to take all their days in December? Because they don't have to be separated.

C. Dour: I just want to leave it the way it is. September and December.

J. Leask: That seems to be the there. I have heard from a few people who want to change it and I have heard from a few people who want to leave it the same.

C. Dour: It is only this year that we have not had product that is good.

J. Leask: I have heard you say for a few years that it is not good. But it is cyclical. There are years it is better and years that it is good.

A. Tamaki: But the reason we wanted to move September is because the quality is not good.

C. Muth: They quality has been good in September is the diver gets less weight. But everybody wants to get the 12 totes, so they just try to fill them and the quality is not good. But if we lower down the weight and give them more days, then September is going to be Ok for quality.

C. Dour: Also if we move Zone 1 to December, to will flood the market.

L. White: But they would move Zone 2 Early Dive season from December to September to make up for that.

A. Tamaki: Why not January, February and March?

C. Muth: Zone 1 January, February and March? 15 days for three months?

J. Leask: Both early and late season. We are stuck on what to do with Zone 1. We have one Zone 1 guy despite your considerable amount of notification. I don't know which way to go. This year Zone 2 was better, and in past years Zone 1 has been better. The key is to get the urchins that are good in September to establish your markets. I know you will all agree on that. So how do we accomplish that?

D. Norris: Can you just hope some Zone 1 guys come to the next meeting? WE will be working on this at the next council meeting also. Maybe if we can just put something on paper now and readdress it when those guys are in the room. They need to look at it.

T. Cheney: I would rely heavily on what Clint says because he is the only Zone 1 harvester here in the room.

C. Richardson: I have no complaints on the tray limit. I don't want to go when it is cold.

J. Taylor: There should be some Zone 1 early guys for input on that. Zone 2 late divers December season has been good and price is good if you stay on the feed. Product was good last three seasons, price a little higher this year I thought.

J. Leask: Did you have any problems selling in December? That little bottleneck stretch?

J. Taylor: No, not really. It worked out alright for us. I sell some to Atchan.

C. Dour: For guys that area always running around, asking for high price, they have problems. For guys who stick to the same guys, they always get treated fairly, according to what the market will pay. The processor is trying to survive, not trying to make tons of money off you. We always try to treat our guys as fair as possible. Not trying to rip them off. If you are working with us, we will treat them fairly.

J. Leask: Chinda you have always been fair. So you don't want Zone 1 really changed at all. Jim you are comfortable the way it is.

J. Taylor: Yes, it works for everybody else.

J. Leask: Clint?

C. Richardson: Like I said, I don't like to dive when it is cold.

C. Muth: How about the totes? More days and less totes?

C. Richardson: If you can get the same number of totes total but over more days, I don't care.

C. Muth: I think that is better because you can concentrate on better quality.

D. Norris: he has a point.

J. Leask: Then it comes back on your shoulders [Chinda & Chun] because you are going to be travelling more days in Zone 1. But it is a closer trip.

C. Muth: For Zone 2 it takes us 2 hours. Zone 2 takes 5 hours. We rolled over a truck in the storm because we rushed back home!

J. Leask: Fair enough. So maybe work with the schedule a little bit on the trays and the days.

C. Richardson: That is fine, but really Zone 1 early has to go around Zone 2. If Zone 2 early has to go in September, we will have to do something different.

J. Leask: Years ago we had the really vocal group that wanted Zone 2 September; they don't really seem to care anymore. I am a Zone 2 early guy, I would rather you dive September and I would rather tend.

T. Cheney: This is a draft calendar and if you put something new and novel out there it will get people to the final season setting meeting. I have heard that they quality is an issue in Zone 2 with the current number of 12 totes. So if you looked at lowering the totes, getting more days and moving those days around, this is the chance to throw some new ideas out there.

J. Leask: I would support moving Zone 1 out of September, but if buyers want to stay in September I would do that as well. I just want what is best for the industry.

C. Dour: Keep it the way it is.

D. Norris: Nobody is locked into September; all of those guys have the choice to fish in December. Because of the low prices, they may abandon the month anyways.

J. Leask: But September is critical Dean. We have to have good product on the market. We may actually gain Chun and Chinda a better market by putting a better product on the market in September. Have you gotten enough the last few years from Zone 1 in September?

C. Dour: Never get enough.

J. Leask: Do Chun and Atchan – do you get enough?

A. Tamaki: No.

C. Muth: No.

J. Leask: Is it worthwhile to couple Zone 1 and Zone 2 to give you a few more urchins?

C. Muth: The quality might not be the same as Zone 1.

T. Cheney: Wouldn't the quality be better in Zone 2?

C. Muth: No. Zone 2 is not better than Zone 1

J. Leask: It was this year. Yes it is, you said it yourself.

C. Muth: No.

T. Sawtelle: You said it a while ago.

J. Leask: Every year is different. The hope is that both Zone 1 and Zone 2 will be good in September.

T. Sawtelle: Why don't all the divers take September because the draggers can't go, and we will take December?

J. Ackley: I agree with that.

D. Norris: Draggers can pick September.

T. Cheney: No, they cannot fish in September due to gear conflict. It is a law with lobster gear.

C. Muth: is there a way if some Zone 2 divers want to move to Zone 1?

T. Cheney: Yes, they can swap with one another. There have been some swaps recently.

C. Muth: You can add more divers from Zone 2 to Zone 1?

J. Leask: Zone 1 you don't want any more divers right now. There is a lot of pressure down there. Goal is to get more biomass down there so you can continue to grow the industry.

C. Muth: We have lived with Zone 1 have so little days for 10 years now. So that is fine. It is the way it is.

T. Cheney: We can leave it the way it is, but if the intent is to improve quality, and you don't want to switch who gets September, then why don't you look at reducing the tote limit as it increases quality? And then you give these guys a few more days.

C. Muth: It is never going to be enough, but we have lived with it for this many years.

T. Cheney: It won't be enough, but if we could improve that quality for product in Tokyo in September, it will be better for the long run.

J. Leask: Clint - are you going to be able to dive 5 days a week? I know you don't like four.

T. Cheney: You don't have to put them all in September. You could put a couple of the extra days somewhere else.

C. Muth: Yes.

J. Leask: When is the August holiday?

C. Muth: September is a better holiday than August.

C. Dour: August is not that great of a holiday.

C. Richardson: So, if you went to 10 totes you would get 18 days.

R. Russell: No, 10 totes would be 16 days according to Maggie's numbers [Appendix B].

J. Leask: So is Maggie factoring in a reduction in those charts?

T. Cheney: No, it is not a reduction. The estimates assume that every catch that would have been above the new limit is reduced to the new limit based on the 2014-15 data. Not everyone is reaching the 12 tote limit. It is based on the landings, not a reduction. It is not straight out calculation of taking so many days away equal and same amount of trays and days. She is doing an in depth analysis looking at current catch rates. This accounts for the fact that not everyone is reaching the 12 totes. Not a straight out calculation like what Larry was doing at the last meeting.

T. Sawtelle: But there will be more weather days missed too.

C. Richardson: I don't think I could ever sell anyone in Zone 1 for a reduction in overall totes without a chance for them to get the 180 totes.

T. Cheney: Then it is off the table. That will be a hard sell.

J. Grego: I need to leave unfortunately. On behalf of the Stonington fleet we need more days to fish, a higher box limit and less enforcement. Stocks look good in our area, not a lot of pressure. This is my 24 urchin season and things look really good, even with the scallop fleet working in our area. We have scallops in urchin bottom and things are looking better than they have in a long time. I think we are on the right track. I would like to see a few more days because of the weather. It is very difficult for us to make this happen down where we are. Like he said about the truck and the bad weather.

J. Leask: I am glad you brought that up. You guys have an hour and a half to meet the truck.

J. Grego: I have to drive over 100 miles to go to Ellsworth to meet the truck to sell my urchins at the end of the day under water. We are also losing all our dive shops. It is 150 miles round trip for me to go to Southwest Harbor to get my tanks filled. And the guy who fills them is going to quit and I don't know where the next dive station is. Let's keep this thing viable. Things are doing ok, give us more days. Good luck to all of you.

T. Cheney: Joe, before you leave we are looking at March 22 for the next meeting to finalize the calendar.

J. Leask: The next one will be where the calendar is set. We will come up with a draft today. But you know this and the Commissioner made this very clear that we will be having a status quo season with the same amount of totes and days for right now. We may be able to juggle with Zone 1 days and tote limits. I fish Stonington as well and I see what you are talking about.

J. Grego: Yes, but they are not everywhere. We did have that die off. But where they are, I see a lot of small, short spine places that are not big enough to harvest. But give it a few years and oh my gosh.

J. Leask: I brought this up before at a previous meeting with Trish. The risk we run, as you can only take that ring when you harvest along the edge as the biomass moves back in. And the biomass is eating that faster than you can remove it. Clint and I have seen it myself, the ledge gets over run with urchins and it is of no commercial value. Last season guys have said that they are not even good in late season now. You can crack them and you might get 12%, but maybe not because there is nothing for them to eat.

J. Grego: I have seen that with the spawn starting up too. But then again the quality of the stuff is not a broad area. We have stuff melting like crazy right now. A lot of that within a given Zone or Region, you can move into deeper water and get away from that. It is not necessarily related to tote limit and quality. A lot of guys just can't stay out of the junk, they just love it as it is quick and easy as opposed to spending 5 or 6 tanks under water. That is another issue. The quality is there and things are looking good overall. I am seeing things I haven't seen in a long time, scallops and urchins together, the pressure is off. Things are looking good.

J. Leask: It is starting to resemble what it did a few years ago. Things are looking good.

T. Smith: Would you like to be able to hold over another day of urchins?

J. Grego: Yes, that is another thing. Living over an hour away and if my buyer and I don't get our wires crossed and I have to hold over and sit on urchins that puts me in violation of the law. If there was someone I could call so I don't have to run them. I come over the Stonington Fish Pier and there is a camera there – you can see what I run every day. I am not trying to break the law. I am trying to maximize our ability.

D. Norris: Get the dealer license so you can hold over the urchins legally.

J. Grego: I am not a dealer. How many licenses do I need? I am just trying to sell what I can.

J. Leask: Does the implementation of the swipe card offer any hope of doing what he is saying, of holding urchins?

T. Cheney: That is something that we can discuss in the future, allowing something like that. But we would have to make sure it is enforceable. The swipe card next year will be just put in to make sure the kinks will get worked out. It will not be able to be used to facilitate something like that for next year. But after that, we can talk about it, just needs to be enforceable to ensure that you are not going to get two days' worth of a limit.

T. Smith: You can't enforce everything.

J. Grego: Driving us out into bad weather, we need to keep this going. Keep our dive shops and support going. I recognize you all have a large job on your hands. Looks like we are on the right track. Good luck to you all.

J. Leask: Back to Zone 1. Should we just leave it status quo?

C. Richardson: Yes. People are interested to see what Zone 2 early does and we will work around that.

J. Leask: As far as time management, as Zone 2 early I would just leave stuff status quo. WE don't seem to have a lot of consensus for anything else.

D. Norris: I would like to put some of the Zone 2 early season into September to help the buyers out. I don't know how many days. But some.

J. Leask: We have been through that a lot over the years, and I don't know how that will pan out. I don't want to stir up the embers again.

D. Norris: They just need to come in. There is a group out there who wants it, it is just hard to get them to come in. We heard three processors say that they want it, and that is important to keep the whole industry viable.

T. Cheney: Chun, Sinuon and Chinda's Zone 2 calendar overlapped and combined the divers and the draggers days so they were all on the same days. **[Appendix C]**. And then we can look at Atchan's proposed calendar **[Appendix D]**.

J. Leask: So they condensed it?

T. Cheney: Yes.

A. Tamaki: But Chun, I thought you did not want to overlap with scallop fishery.

C. Muth: Yes, but there is going to be an overlap a little bit.

D. Norris: Atchan the only thing I don't like in your calendar is the three day weeks where you have a Wednesdays off. That makes it hard for a lot of the guys that travel.

A. Tamaki: I did this because of the compromise on four days. And then the draggers can fish the Thursdays and Fridays.

D. Norris: it increases expenses for us.

J. Leask: I would have a struggle doing that way I fish.

A. Tamaki: Ok. Otherwise 5 days a week.

J. Leask: I would like to be able to get 21 totes on one day with the swipe card. But not this year.

D. Norris: On the whole Atchan I like you're scheduled. The skipping the Wednesday is the only thing I don't care for.

A. Tamaki: Because of the four days/week compromise.

T. Cheney: So I have had a few Zone 2 draggers contact me that passed along that they were not happy with early season draggers fishing in the late season. Barry Huckins is here to advocate for that.

B. Huckins: The thing about it is, the early season should be early season, not the whole season. We never even fished beyond the 9th of January. I always had early season. If I put 10 of my days in late season, then I will go late season. So I went late season this year. Well then the days were Monday, Tuesday and Wednesdays and so far I have fished urchins six days this year because I can't afford to dump my drag and run back to the Whiting River all the way down below and switch so I can fish both urchins and scallops. So, the early season, if they want early season, stay in early season. If they want to go in February and March, pick the late season and go. Because it is not right.

T. Sawtelle: That is why I say spread it out and go Thursday and Fridays.

B. Huckins: The thing about it is, you guys start early because you want early season. Stay in early season. We lost last week, which was the money week.

T. Sawtelle: Why don't you take early season then?

B. Huckins: I normally do. But there were 10 days in the late season and next month we probably won't get many days in because they are already melting.

T. Sawtelle: Their proposal is for Thursdays and Fridays [Atchan's proposed calendar – **Appendix D**] for next year's Zone 2 late.

M. McConnell: When you guys took it, you could go scalloping.

T. Sawtelle: I wasn't doing the calendar for Zone 2 Late Season draggers last year. I was doing early season.

T. Cheney: The calendar that was developed for the current season was set by the people in this room last year. I am really glad that you guys came this year to help make sure that you can advocate for what you want. We are all here to try to work this out. You are all fishermen, so if you are able to let us know what you would like to have, and obviously you would like to have a little more separation but that hasn't happened the past couple of years and that is why we are here to figure it out.

M. McConnell: Why do they have the early season in the late season?

J. Leask: That was something that was developed in the early days. One thing to keep in mind is the way the regulations are, you can make the schedule you want. The people in the room made the calendar that is the way it pans out.

M. McConnell: I am late season and last week I couldn't even go.

R. Huckins: Anyone I have talked to down home does not want this, the blending.

T. Sawtelle: That is just the opposite of the people I talk to.

R. Huckins: I have talked to David Kline and all the Cutler guys. They don't want it.

T. Sawtelle: David is the only one from Cutler that urchins.

T. Cheney: Those guys are not here. You guys are here so let's talk about what you guys want to see. This meeting is pretty open and we figure it out together.

M. McConnell: Last week they got a really good price and we couldn't go. How come?

J. Leask: It is a good conversation to have. I looked at the scheduled and I was surprised by it.

T. Cheney: It also has happened in the Zone 1 calendar where early draggers and going in the late season. I think it is a product of there being so few days, we have tried over the past few years to make sure that in any odd week there is enough people going in all of the zones to keep the processors going.

C. Muth: I believe the just chase for the price.

J. Leask: Everybody wants to make the most money. You guys didn't want to miss last week because of the good prices.

B. Huckins: Last week they got \$5.30.

T. Sawtelle: Where at?

M. McConnell: Down the cove ramp.

B. Huckins: Yesterday I got \$3.10.

J. Leask: Did they pay \$5.30 vacation week?

A. Tamaki: Vacation week, yes. There was a shortage.

J. Leask: So competition price. I haven't heard of \$5 all year long.

T. Sawtelle: Only Tracey wanted to do that. We talked about it. Everybody wanted that weeks' vacation.

J. Leask: That is true. The guys in the room last year wanted that week for vacation, so they scheduled it. You guys make your calendar, we want that week.

T. Sawtelle: You guys are Zone 2 late, usually whoever is here for Zone 2 Late, they fill out the calendar. I don't know who was here last year. I was in the early season group.

J. Leask: When we make a season, you have the choice of when you want to go. You can stretch your season longer.

M. McConnell: We need to fish when these guys [processors] need the product. If we don't have these guys we don't have a fishery.

J. Leask: Can you guys put together a Zone 2 late calendar?

M. McConnell: Have it overlap between scalloping and egging – then it will be garbage. Junk.

J. Leask: That is one thing the scallop guys did when they were here, they would arrange it so they could go egging and scalloping 5 days a week. But Chuon doesn't want to travel 5 days a week. That is what you are going to hear.

M. McConnell: We all want to be together.

C. Muth: We can move those over, but there is going to be some overlap with scallops a little bit. December we cannot go away, so there will be overlap. February definitely we can move to a Thursday, Friday, Saturday, whatever. In January we can move the four day stretch so we don't have to overlap with scallops. But I recommend divers and draggers in the same day.

A. Tamaki: Chuon that is impossible as Monday, Tuesday and Wednesdays they are scalloping.

C. Muth: We can move to Thursday, Friday and Saturday. It doesn't affect us at all.

A. Tamaki: That is exactly what I have.

M. McConnell: How come we can't change the scallop days?

T. Cheney: They will not change those days because of their markets, they need to have that stuff down in Boston and south at the end of the week.

C. Muth: Then we can take the other two days – Thursdays and Fridays. There will be overlap with the scallops just a little bit.

M. McConnell: Maybe in February. But March in the low price.

J. Leask: A year ago March was the highest prices. Competition.

M. McConnell: Late season in March they [buyers] don't even come. We don't even see the truck anymore.

B. Huckins: My last two weeks I couldn't even sell my urchins because the trucks didn't come. I had to dump them.

T. Sawtelle: We had to fight to get \$2 last year.

J. Leask: There is a lack of communication amongst fishermen because I was getting \$5. At this point we should break into smaller groups and put together a calendar the way the groups want. We can put the draft together and then folks can comment and come to the next meeting to finalize it. The buyers will visit each group to make sure they all mesh.

[All groups broke out and developed calendars. Draft calendars were compiled to ensure accurate number of days and reviewed by all the processors prior to finalizing them. Please see **Appendix E** for DRAFT calendars.]

Next meeting will be on **March 22** to finalize the calendars.

Appendix A

Carl Wilson's Zone 2 Closed Area Handout

Objectives from the DMR – Closed Area Discussion

Rebuilding the resource

Obtain a reasonable level of resource to support a larger fishery

Belief that there is a future for this fishery and resource

Closed area can start the discussion of how the resource could recover and address current questions

Characteristics of the closed area

Represents an area of current productivity

Area that could encompass 5% of harvest in Zone 2

Has a mix of sizes, habitats, exposures, 'ability to recover'

Scallop rotation

Questions around a closed area

Changes in biomass

Feeding front changes - Lateral area versus depth

Roe content

What characteristics are needed to satisfy rebuilding by industry

Research

Intensified DMR survey

Roe monitoring

Industry survey

Settlement monitoring

Transplanting (bulking, manipulation of habitat)

Experimental fishery

Appendix B

Maggie Hunters Days and Trays Options for Zone 1

At the last SUZC meeting, we were asked to consider alternative scenarios for the 2016-17 sea urchin seasons, involving changes in the daily tray limits and the number of open fishing days. Below are estimated reductions in landings for a range of proposed new limits. The estimates assume that every catch that would have been above the new limit is reduced to the new limit, with no other changes, based on 2014-15 data. It assumes no “fishing up” to the new limit, no “catching up” by catching the urchins later in the season (“evening out” the landings), or changes in fishing behavior. See the next pages for the performance of the existing tray limits and whether conservation and quality goals were met.

Zone 1 (currently limited to 12 trays)

Zone 1 Diver Tray Limit Scenarios, assuming 80.6 lbs/tray, no fishing up								
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
% reduction	52%	43%	34%	26%	18%	12%	7%	3%

Zone 1 Dragger Tray Limit Scenarios, assuming 90.6 lbs/tray, no fishing up								
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
% reduction	63%	54%	46%	38%	30%	22%	14%	6%

Zone 1 Tray Limit Scenarios, Divers & Draggers Combined (no fishing up, no catching up)								
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
% reduction	54%	45%	36%	28%	20%	14%	8%	4%
Season Days	32	27	23	20	18	17	16	15

Days	% increase
15	0%
16	6%
17	12%
18	17%
19	21%
20	25%
21	29%
22	32%
23	35%
24	38%
25	40%
26	42%
27	44%
28	46%
29	48%
30	50%
31	52%
32	53%
33	55%

Zone 2 (currently limited to 7 trays)

Zone 2 Diver Tray Limit Scenarios, no fishing up			
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>
% reduction	35%	22%	10%

Zone 2 Dragger Tray Limit Scenarios, no fishing up			
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>
% reduction	36%	23%	10%

Zone 2 Tray Limit Scenarios, Combined, no fishing up			
Proposed tray limit	<u>4</u>	<u>5</u>	<u>6</u>
% reduction	35%	22%	10%
Season Days	58	49	42

Days	% increase	Days	% increase
38	0%	58	34%
39	3%	59	36%
40	5%	60	37%
41	7%	61	38%
42	10%	62	39%
43	12%	63	40%
44	14%	64	41%
45	16%	65	42%
46	17%	66	42%
47	19%	67	43%
48	21%	68	44%
49	22%	69	45%
50	24%	70	46%
51	25%	71	46%
52	27%	72	47%
53	28%	73	48%
54	30%	74	49%
55	31%	75	49%
56	32%	76	50%
57	33%		

Current Tray Limit “Before and After” Summary Statistics

Zone 1 Divers

Season	Tray Limit	Landings (lbs)	Trips	Mean lbs/trip	Mean Roe %	Active Harvs
2012-13	none	182,964	281	651	9.7	32
2013-14*	none	304,669	432	705	9.6	37
2014-15**	12	312,119	433	721	9.1	36

Zone 1 Draggers

Season	Tray Limit	Landings (lbs)	Trips	Mean lbs/trip	Mean Roe %	Active Harvs
2012-13	none	90,407	60	1,507	8.2	7
2013-14*	none	79,474	60	1,325	8.6	6
2014-15**	12	70,269	64	1,098	10.0	7

Zone 1 Divers and Draggers

Season	Tray Limit	Landings (lbs)	Trips	Mean lbs/trip	Mean Roe %	Active Harvs
2012-13	none	273,371	341	802	9.5	39
2013-14*	none	384,143	492	780	9.5	43
2014-15**	12	382,388	497	769	9.2	43

Zone 2 Divers and Draggers

Season	Tray Limit	Landings (lbs)	Trips	Mean lbs/trip	Mean Roe %	Active Harvs
2011-12	none	2,149,873	3,352	631	12.6	205
2012-13	none	1,564,810	2,299	670	13.2	160
2013-14*	7	1,539,565	2,797	547	13.1	161
2014-15**	7	1,606,397	2,742	583	12.6	181

* preliminary as of 3-2-15

** very preliminary as of 6-18-15

Preliminary Observations:

Zone 1:

1. In 2014-15, the first year of the 12-tray limit, diver landings went up slightly. The number of diver trips remained the same as the previous season. The mean daily catch went up slightly, suggesting that there was some “fishing up” to the tray limit (see frequency graphs and notes on next page), or improved stock availability.
2. 2014-15 dragger landings went down about 12%, although the number of trips went up slightly from the previous season. The mean daily catch went down 17%.
3. 2014-15 overall landings and trips (for both gears combined) were about the same as the previous season.
4. Diver roe indices did not improve. However, dragger roe indices did go up.

Zone 2:

1. In 2013-14 and 2014-15, the first two years of the 7-tray limit, landings did not change significantly from the 2012-13 season. The mean daily catch went down, but the number of trips went up.
2. Roe indices after the tray limit went into effect were about the same as they had been before.
3. Roe indices (not shown above by gear) and mean daily catches (see frequency graph) for divers were about the same as draggers.
4. Mean daily urchin catches for draggers may be pulled down by small urchin bycatches in the scallop fishery.

Appendix C (a)

Draft Zone 1 Dive Processor Calendar developed by Chuon, Sinion, Machan & Chinda

Chuon's 2016 - 2017 Calendar

Zone 1 Early Dive

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5 O	6 O	7 O	8 O	9	10
11	12 O	13 O	14 O	15 O	16	17
18	19 O	20 O	21 O	22 O	23	24
25	26 O	27 O	28 O	29	30	

15

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

0

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
15

2016 - 2017 Calendar

Zone 1 Late Dive

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5 O	6 O	7 O	8 O	9	10
11	12 O	13 O	14 O	15 O	16	17
18	19 O	20 O	21 O	22 O	23	24
25	26 O	27 O	28 O	29	30	31

15

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
15

Appendix C (b)

Draft Zone 1 Drag Processor Calendar developed by Chuon, Sinion, Machan & Chinda

Chuon's 2016 - 2017 Calendar

Zone 1 Early Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

15

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
15

2016 - 2017 Calendar

Zone 1 Late Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

0

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

8

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7

Total Days
15

Appendix C (c)

Draft Zone 2 Combination Dive/Drag Processor Calendar developed by Chuon, Sinion, Machan & Chinda

Chuon's 2016 - 2017 Calendar

Zone 2 Early Dive/Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

13

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

12

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

13

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
38

Chuon's 2016 - 2017 Calendar

Zone 2 Late Dive/Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

12

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

8

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

8

Total Days
38

Appendix D (a)

Draft Zone 1 Dive Processor Calendar developed by Atchan Tamaki

Atchan's 2016 - 2017 Calendar

Zone 1 Early Dive

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

5

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
15

2016 - 2017 Calendar

Zone 1 Late Dive

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

0

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

1

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

8

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

6

Total Days
15

Appendix D (b)

Draft Zone 1 Drag Processor Calendar developed by Atchan Tamaki

Atchan's 2016 - 2017 Calendar

Zone 1 Early Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

5

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
15

2016 - 2017 Calendar

Zone 1 Late Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

0

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

1

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

8

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

6

Total Days
15

Appendix D (c)

Draft Zone 2 Dive Processor Calendar developed by Atchan Tamaki

Atchan's 2016 - 2017 Calendar

Zone 2 Early Dive

S	M	Tu	W	Th	F	S
				1	2	3
4	5 O	6 O	7	8	9	10
11	12 O	13 O	14	15	16	17
18	19 O	20 O	21	22	23	24
25	26 O	27 O	28	29	30	

8

S	M	Tu	W	Th	F	S
						1
2	3 O	4 O	5	6 O	7	8
9	10 O	11 O	12	13	14	15
16	17 O	18 O	19	20 O	21	22
23	24 O	25 O	26	27	28	29
30	31 O					

11

S	M	Tu	W	Th	F	S
		1 O	2	3	4	5
6	7 O	8 O	9	10	11	12
13	14 O	15 O	16	17	18	19
20	21 O	22 O	23	24	25	26
27	28 O	29 O	30			

9

S	M	Tu	W	Th	F	S
				1	2	3
4	5 O	6 O	7	8 O	9	10
11	12 O	13 O	14	15 O	16	17
18	19 O	20 O	21	22	23	24
25	26 O	27 O	28	29	30	31

10

S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

0

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

0

Total Days
38

2016 - 2017 Calendar

Zone 2 Late Dive

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

S	M	Tu	W	Th	F	S
				1 O	2 O	3
4	5	6	7	8 O	9 O	10
11	12	13	14	15 O	16 O	17
18	19	20	21	22 O	23 O	24
25	26	27	28	29 O	30 O	31

10

S	M	Tu	W	Th	F	S
1	2 O	3 O	4	5	6	7
8	9 O	10 O	11	12	13	14
15	16 O	17 O	18	19	20	21
22	23 O	24 O	25	26	27	28
29	30 O	31 O				

10

S	M	Tu	W	Th	F	S
			1	2 O	3	4
5	6 O	7 O	8	9 O	10	11
12	13 O	14 O	15	16 O	17	18
19	20 O	21 O	22	23 O	24	25
26	27 O	28 O				

12

S	M	Tu	W	Th	F	S
			1	2 O	3	4
5	6 O	7 O	8	9 O	10	11
12	13 O	14 O	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

6

Total Days
38

Appendix D (d)

Draft Zone 2 Drag Processor Calendar developed by Atchan Tamaki

Atchan's 2016 - 2017 Calendar

Zone 2 Early Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

8

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

8

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

4

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

6

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

2

Total Days
38

2016 - 2017 Calendar

Zone 2 Late Drag

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

0

October 2016						
S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

0

November 2016						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

0

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10

January 2017						
S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

8

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

12

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

8

Total Days
38

Appendix E (a)

DRAFT February 24 Sea Urchin Zone Council Developed Calendar

Feb 24 SUZC Proposed ZONE 1 2016 - 2017 Urchin Season

O = Open

□ = Closed

Early Season for Divers, Rakers and Trappers

Late Season for Divers, Rakers and Trappers

September 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Early Season for Draggers

December 2016						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Late Season for Draggers

February 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Appendix E (b)

DRAFT February 24 Sea Urchin Zone Council Developed Calendar

Feb 24 SUZC Proposed ZONE 2 2016 - 2017 Urchin Season

O = Open = Closed

Early Season for Divers, Rakers and Trappers

September 2016

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2016

S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2016

S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2016

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Late Season for Divers, Rakers and Trappers

December 2016

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

January 2017

S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Early Season for Draggers

October 2016

S	M	Tu	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2016

S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2016

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

January 2017

S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Late Season for Draggers

December 2016

S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

January 2017

S	M	Tu	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March 2017

S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	