Tahoe Keys 2017 Aquatic Macrophyte Survey Report

Prepared Pursuant to

California Regional Water Quality Control Board Lahontan Region Board Order No. R6T-2014-0059

Tahoe Keys
PROPERTY OWNERS ASSOCIATION
356 Ala Wai Boulevard South Lake Tahoe CA 96150
530-542-6444 TAHOEKEYSPOA.COM

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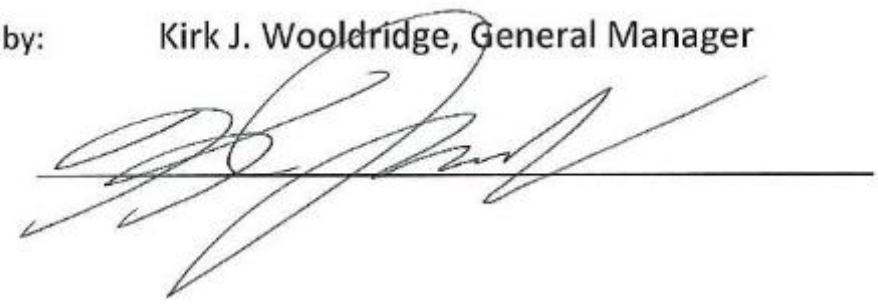
Prepared for the Tahoe Keys Property Owners Association

Submitted by: Kirk J. Wooldridge, General Manager

Signature: 

Prepared by Sierra Ecosystem Associates

South Lake Tahoe, CA

Sierra Ecosystem Associates

TAHOE KEYS 2017 AQUATIC MACROPHYTE SURVEY REPORT

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1.0 INTRODUCTION

As required by the Waste Discharge Requirements (WDRs) issued by the Lahontan Regional Water Quality Control Board, Order No. R6T-2014-0059 on July 18, 2014, this report summarizes the results of the annual aquatic macrophyte survey completed in the Tahoe Keys lagoons in 2017. The survey took place July 5-7, 2017 and was conducted by Sierra Ecosystem Associates (SEA) and the Tahoe Keys Property Owners Association (TKPOA).

1.1 Overview of Site

The Tahoe Keys is a housing development, created in the 1950s and 1960s, located at the south end of Lake Tahoe, which is comprised of a residential area, public marina, and business center that all sit on approximately 372 acres of land. In addition to the approximately 1,529 private homes, several public and private entities own land in and around the Tahoe Keys development including; Tahoe Keys Village, Tahoe Keys Marina and Yacht Club, the State of California, and Tahoe Keys Beach and Harbor Association.

The water surface area encompassed by the 2017 Aquatic Macrophyte Survey (2017 Survey) was approximately 172 acres. This water surface area is separated into three main lagoons: Main Lagoon, Marina Lagoon, and Lake Tallac (Figure 1).

Figure 1. 2017 Aquatic Plant Survey Area

1.2 Purpose of 2017 Survey

The Tahoe Keys Property Owners Association (TKPOA) maintains the waterways of the Tahoe Keys lagoons and annually surveys for aquatic macrophytes as required by the WDRs issued by the Lahontan Regional Water Quality Control Board to TKPOA (LRWQCB 2014).

Over the past few decades, the volume of weeds harvested has increased from 100 cubic yards in 1984 to 10,125 cubic yards in 2016 (TKPOA 2017a). Beginning in 2014, as part of the WDRs and in response to this increase, the TKPOA began preparing and updating an Integrated Management Plan (IMP) annually to develop control measures to address the invasive plants in the Tahoe Keys. The 2017 survey, along with other annual surveys, supply benchmark and trend data to track the efficacy of IMP methods and will help identify successful approaches to achieve the IMP goals and objectives.

In addition to complying with the WDRs and providing benchmark information for success of IMP methods, the 2017 macrophyte survey took into consideration the rapid spreading of *Potamogeton crispus* (curlyleaf pondweed). In the past two years, the presence of curlyleaf pondweed in the lagoons and around the lake has been increasing. Early in the 2017 season, the TKPOA Water Quality Department crew reported increased observations of curlyleaf pondweed in areas and at

depths not previously seen. The 2017 macrophyte survey also noted this increase, which is discussed in a later chapter.

Past aquatic macrophyte surveys of the Tahoe Keys lagoons were conducted in 2009, 2011, 2014, 2015, and 2016 to measure presence and absence of plant species (composition), and areal cover. Recent surveys also estimated biovolume, which is the volume of plant matter, of submersed aquatic vegetation.

The results of the 2017 survey were compared to results of the prior surveys to determine trends in growth of the aquatic macrophyte populations, and possible trends in species composition or abundance.

1.3 Summary of 2017 Survey Results

Species presence was found to be similar to that of previous years: *Myriophyllum spicatum* (Eurasian watermilfoil), *Potamogeton crispus* (curlyleaf pondweed), *Ceratophyllum demersum* (coontail), *Potamogeton richardsonii* (Richardson's pondweed), *Potamogeton foliosus* (leafy pondweed), *Elodea canadensis* (elodea), *Brasenia schreberi* (water-shield), and various species of *Nitella.*, *Chara*, *Spirogyra*, and other filamentous algae. However, the prevalence and relative abundance of curlyleaf pondweed has increased in the Tahoe Keys lagoons for the second year in a row. In addition, curlyleaf pondweed was found in some areas up to 20 feet deep, which is much deeper than detected previously. While native coontail is the most prevalent species, the trend data indicate that invasive curlyleaf pondweed is becoming widely established throughout the lagoons and could potentially become the dominant macrophyte within the next year or two. The plant's swift and multiple modes of establishment (e.g., fragments, turions, and seeds), coupled with its ability to stay intact and tethered to boats, strongly suggest that this invasive species could become well-established in much of the near-shore, shallow-zone (roughly 20 feet and less) ecosystems throughout Lake Tahoe within the next few years.

2.0 METHODOLOGY

The aquatic macrophyte surveys focus on submersed and floating-leaf aquatic plants in the littoral zones of the surveyed areas in the Tahoe Keys lagoons. Fringe wetlands and emergent species were not sampled.

The method used for the 2017 survey was point-intercept to determine composition. June and July efforts to collect plant biomass data using hydroacoustic surveys were unsuccessful due to equipment malfunctions, but hydroacoustic sampling was initiated successfully beginning in August to assess the biovolume of aquatic plants present.

2.1 Timing

The 2017 point-intercept survey was conducted July 5-7, 2017. This time period was chosen in order to coincide with the evident and identifiable point in the growing season and to coincide with germinating, sprouting, flowering, or fruiting stages of the various species. Due to the short growing season in Lake Tahoe and the germination and sprouting timing of the aquatic plants of concern, only one period of data collection is considered sufficient to assess relative abundance.

2.2 Point – Intercept Sampling

This sampling was done by plunging a double-tined, telescoping pole-mounted "thatch" rake into the water to the bottom, twisting the attached vertical pole when retrieving the rake, and then identifying the plant species in the sample. Georeferenced sample locations were accessed by boat along evenly spaced and somewhat linear transects that represented the conditions of the area. The percent species composition was determined visually and recorded. Water depth at each sample was also recorded using reference marks on the pole attached to the sampling rake. Due to curlyleaf pondweed's morphology, this species may have been less efficiently sampled than Eurasian watermilfoil or coontail using the thatch rake. As a result, curlyleaf pondweed may be underrepresented by the estimated composition percentages.

Floating plants, such as watershield (*Brasnia schreberii*), are not well sampled with the method used in this survey. Watershield was the only floating aquatic plant observed and was rare within the Main Lagoon, but was prevalent along the north and south near-shore areas of Lake Tallac. Additionally, the invasive emergent plant, yellow pond lily (*Nuphar polysepala*), was found in the Lake Tallac Slough between Lassen and Whitney Drives.

2.3 Hydroacoustic Sampling

Hydroacoustic sampling uses sonar technology to scan the bottom of a water body to determine and record the surface water temperature, presence of plant matter, plant height, and biovolume. These data are then analyzed to determine the percent of the water column containing plant matter. By comparing the average percent of the water column containing plant matter to the total volume of the water body, the approximate amount of biomass can be determined. Hydroacoustic data is also used to determine the average vessel hull clearance, which is the distance between the water surface and the top of the aquatic plant canopy.

Hydroacoustic scans were conducted throughout the macrophyte survey, but due to sensor problems, the data was corrupted and therefore unusable. Hydroacoustic data was gathered from a later survey date (July 31 to August 4, 2017) and is provided in this report.

2.4 Data Analysis

Spatial data obtained from point sampling and transect sampling for species occurrence were analyzed using ArcGIS 10 with Spatial Analyst to create the thematic heat maps showing the composition and distribution of a species based on percent of composition. The species composition data was interpolated into a raster surface from points using an Inverse Distance Weighted (IDW) technique. IDW uses data points to predict the values of un-sampled locations by weighting the surrounding values by distance. This method interpolates the composition percentage of the data points into a surface display representing the species composition and distribution within the Tahoe Keys lagoons.

To compare the 2017 survey data with data from past surveys (2009, 2011, 2014, 2015, 2016), the current data were normalized to show species presence or absence. This approach provided a means to reveal trends in relative abundance and prevalence of the various aquatic plants over the past years.

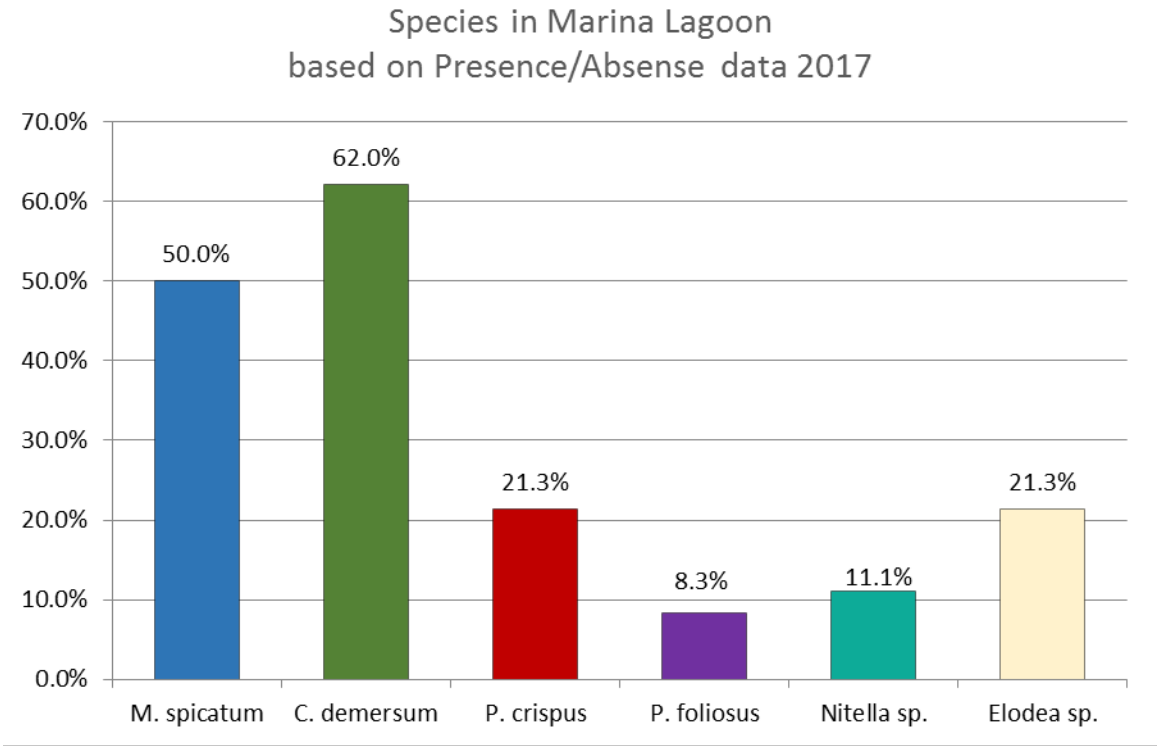
3.0 RESULTS

A total of 521 points were sampled throughout the Tahoe Keys lagoons, including the Marina Lagoon (108 points), Main Lagoon (375 points), and Lake Tallac (38 points), as shown in Figure 1. Sections 3.1 through 3.3 discuss the point-intercept data collection results. Section 3.4 discusses and compares the August 2017 and August 2016 hydroacoustic data sets. Note that the values (percentages) represent the frequency that each species was detected in a point sample. For example, *M. spicatum* could be detected in 60% of samples and *C. demersum* could be detected in 70% of the samples. Thus, these data do not represent the relative abundance totaling 100%, but instead represent *frequency of occurrence*.

3.1 Marina Lagoon

In the Marina Lagoon, a presence/absence analysis (Figure 2) showed a frequency of occurrence of 62.0% for coontail - *C. demersum* and 50.0% for Eurasian watermilfoil - *M. spicatum*. Other species detected included curlyleaf pondweed - *P. crispus* (21.3%), leafy pondweed - *P. foliosus* (8.3%), *Nitella* spp. (11.1%), and *Elodea* spp. (21.3%).

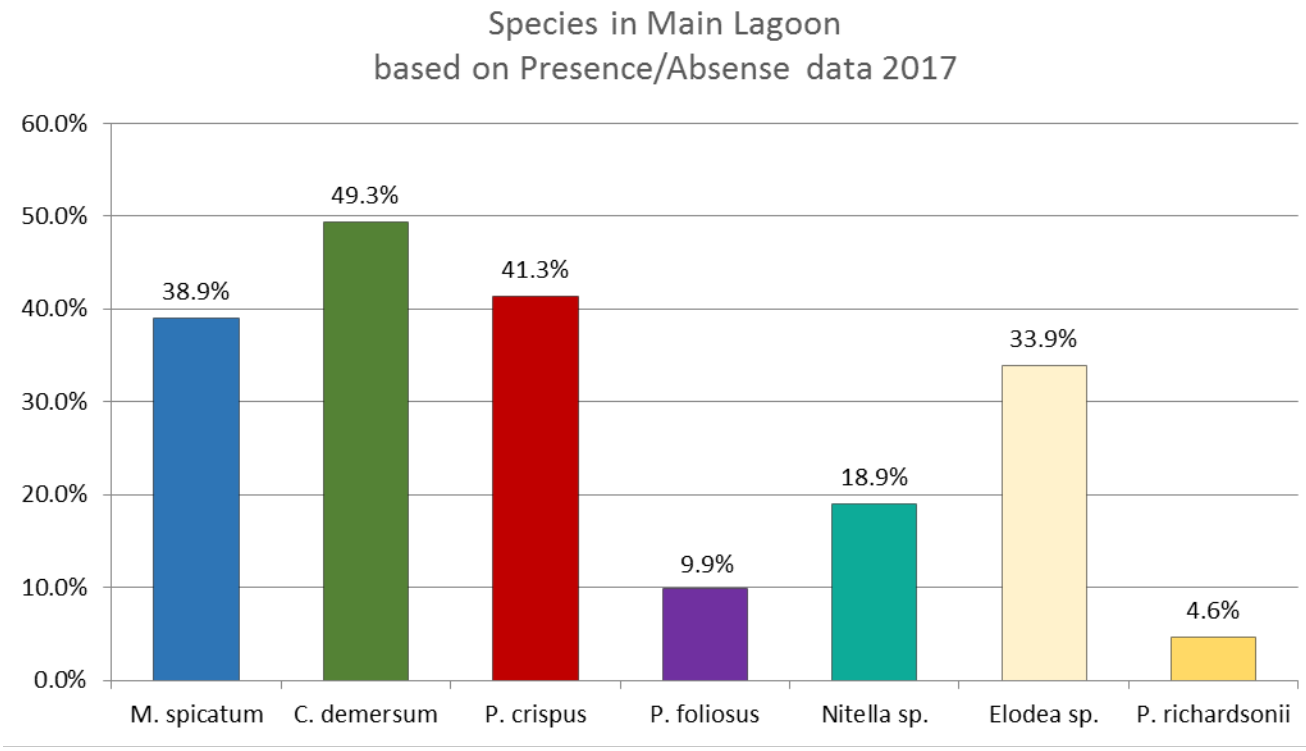
Figure 2. Species in Marina Lagoon



3.2 Main Lagoon

In the Main Lagoon, presence/absence analysis (Figure 3) showed a frequency of occurrence of 49.3% for coontail - *C. demersum* and 38.9% for Eurasian watermilfoil - *M. spicatum*. Other species detected included curlyleaf pondweed - *P. crispus* (41.3%), leafy pondweed - *P. foliosus* (9.9%), *Nitella* spp. (18.9%), *Elodea* (33.9%), and Richard's pondweed - P. richardsonii (4.6%).

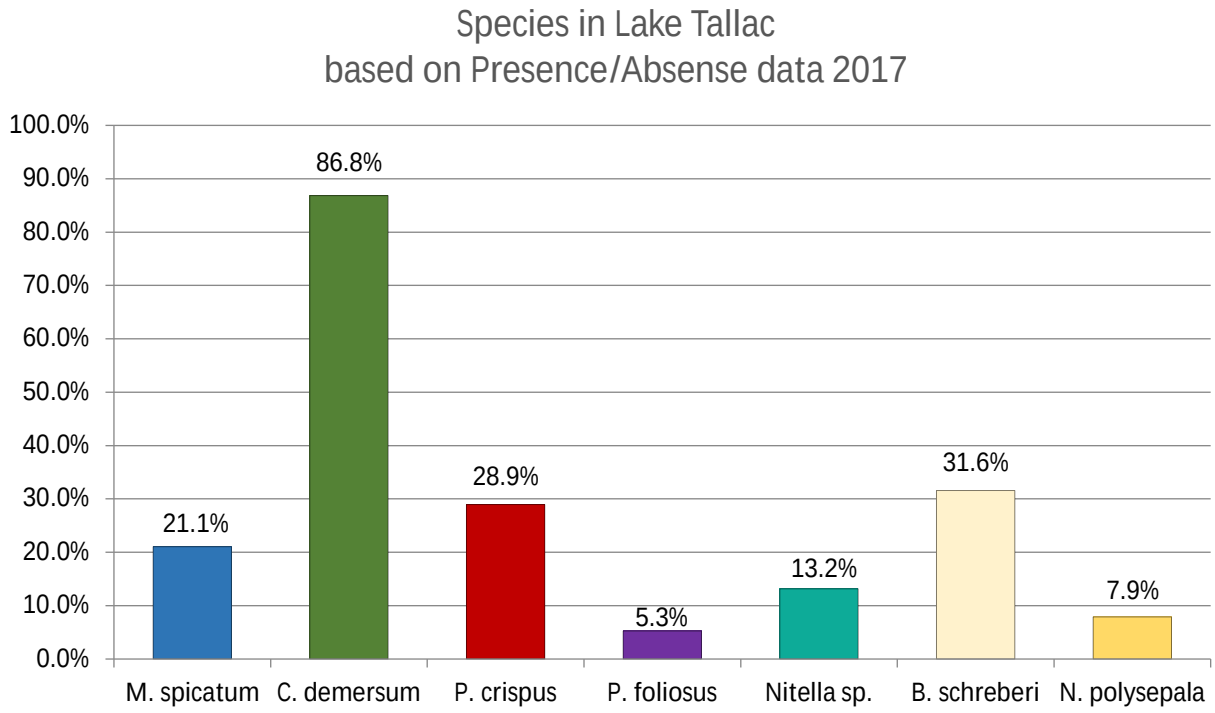
Figure 3. Species in Main Lagoon



3.3 Lake Tallac

In the Lake Tallac, presence/absence analysis (Figure 4) showed a frequency of occurrence of 86.8% for coontail - *C. demersum* and 21.1% for Eurasian watermilfoil - *M. spicatum*. Other species detected included curlyleaf pondweed - *P. crispus* (28.9%), leafy pondweed - *P. foliosus* (5.3%), *Nitella* spp. (13.2%), watershield - *B. schreberi* (31.6%), and yellow pond lily - *N. polysepala* (7.9%).

Figure 4. Species in Lake Tallac



3.4 Hydroacoustic Sampling

As noted previously, the hydroacoustic scan data taken during the early July point-intercept survey was corrupted and unusable. Therefore, additional data collected from July 31 to August 4, 2017 is shown and discussed here and compared to early August 2016 hydroacoustic survey data.

The Marina Lagoon had a percent area coverage of approximately 77% and an average plant biovolume of approximately 41% meaning that on average, 41% of the water column contains plant matter. Figure 5 shows the heat map of vegetation for the Marina Lagoon. It should be noted that part of the lake and the Main Lagoon was included in the scan results, which may influence the percent area coverage and average plant biovolume.

The Main Lagoon had a percent area coverage of approximately 85% and an average plant biovolume of approximately 70%. Figure 6 shows the heat map of vegetation for the Main Lagoon.

Lake Tallac had a percent area coverage of approximately 91% and an average plant biovolume of approximately 80%. Figure 7 shows the heat map of vegetation for Lake Tallac.

Figure 5. Biovolume of Marina Lagoon

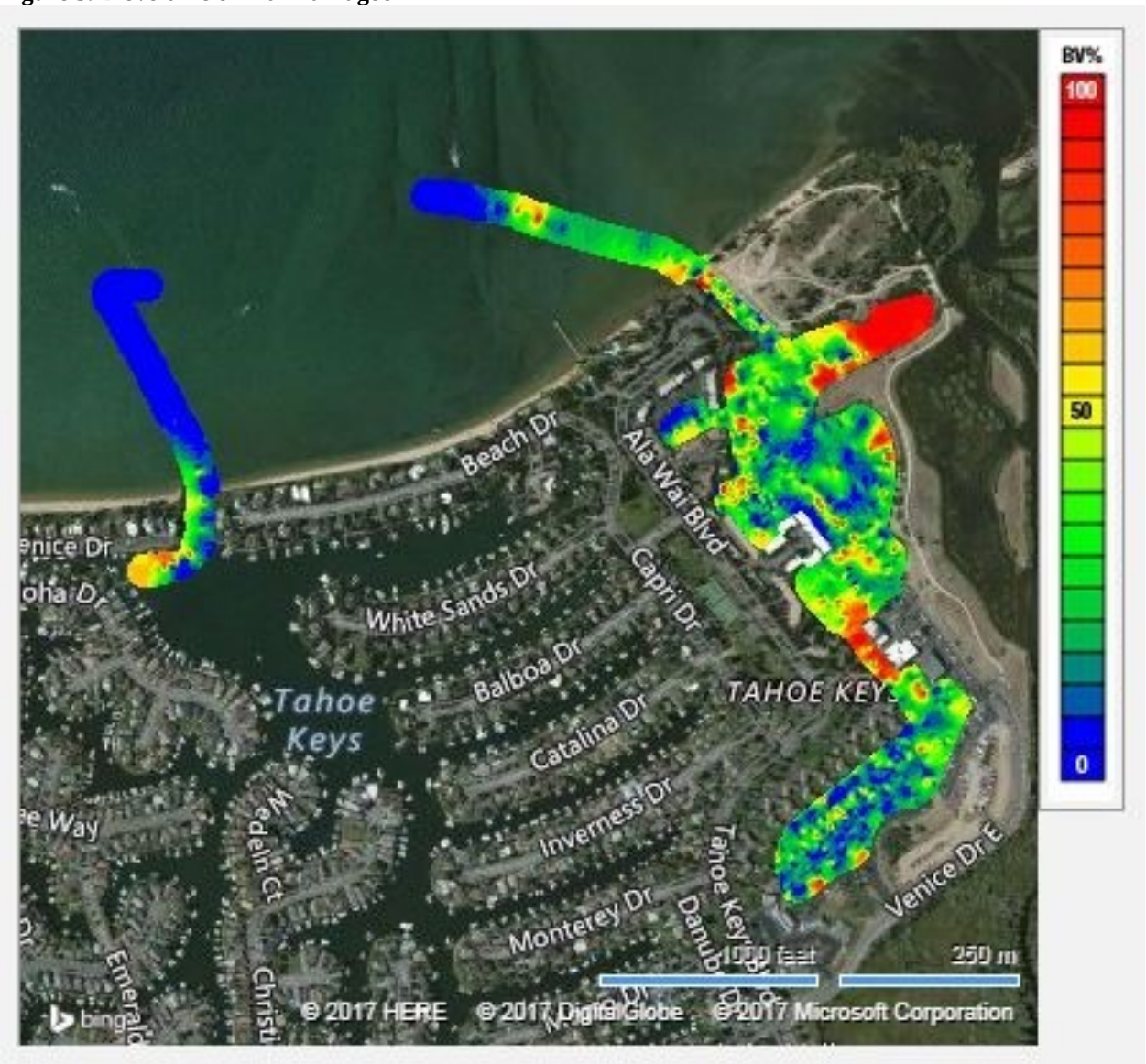
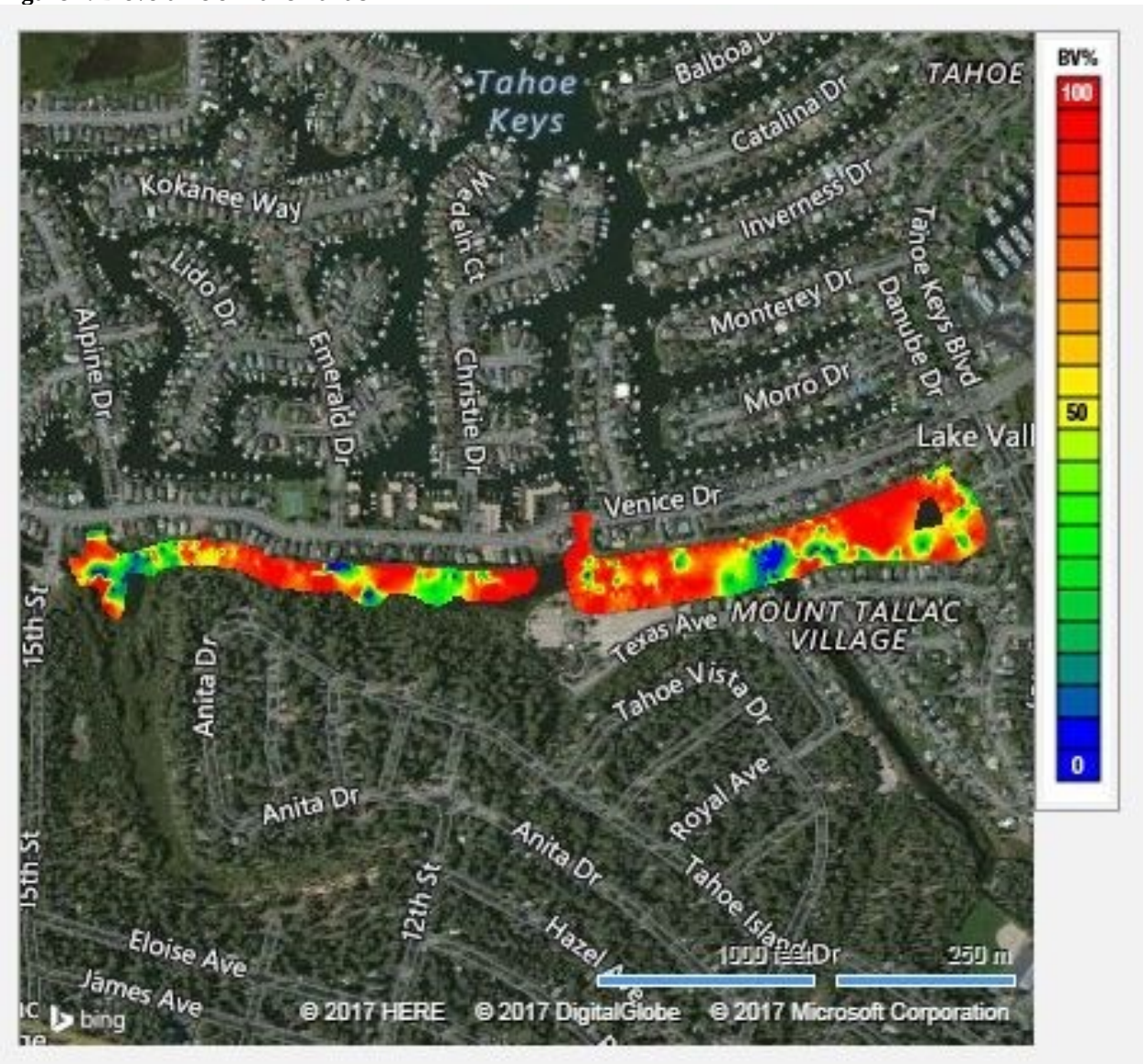


Figure 6. Biovolume of Main Lagoon

Figure 7. Biovolume of Lake Tallac



Data taken from August 6-9, 2016 showed a percent area coverage of 97% for the Main Lagoon and an average plant biovolume of 78%. The track size was 10m for the 2016 data whereas the track size for the 2017 data was 25m.

Data collected for the Marina Lagoon on August 9, 2016 was not complete as it only covered approximately half of the lagoon. However, a visual comparison of the heat maps (Figures 5 and 8) shows that in 2016 the biovolume was higher in most areas than in 2017.

There is no comparable data for Lake Tallac from early August 2016.

Figure 8: 2016 Marian Lagoon Biovolume

4.0 DISCUSSION AND ANALYSIS

The 2017 Macrophyte Survey showed some similarities to previous surveys. However, there was a notable decrease in coontail and a large increase of curlyleaf pondweed in all three of the lagoons. Many other species were observed in the waterways, but for the purpose of discussion, the primary focus will be on Eurasian watermilfoil, curlyleaf pondweed, and coontail, which are the three species highlighted for control in the IMP. Table 1 shows the frequency of occurrence for all species recorded in the 2015, 2016, and 2017 surveys.

Table 1. Frequency of Occurrence of Aquatic Plants in Each Lagoon

	Marina Lagoon			Main Lagoon			Lake Tallac		
Species	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
Eurasian watermilfoil (*M. spicatum*)	42.0%	50.5%	50.0%	49.7%	64.8%	38.9%	42.1%	60.6%	21.1%
Coontail (*C. demersum*)	66.4%	67.3%	62.0%	37.4%	69.8%	49.3%	94.7%	93.9%	86.8%
Curlyleaf Pondweed (*P. crispus*)	0%	12.2%	21.3%	3.1%	31.3%	41.3%	0%	21.2%	29.0%
Leafy Pondweed (*P. foliosus*)	0%	10.7%	8.3%	4.9%	27.8%	9.8%	2.6%	12.1%	5.3%
Nitella (*Nitella sp.*)	1.5%	9.7%	11.1%	6.7%	16.7%	18.9%	0%	3.0%	13.2%
Elodea (*Elodea sp.*)	0.7%	21.4%	21.3%	6.1%	47.7%	33.9%	2.6%	6.0%	0%
Richardson's Pondweed (*P. richardsonii*)	0%	1.5%	0%	3.1%	4.6%	4.3%	0%	0%	0%
Watershield (*B. schreberi*)	N/A	N/A	N/A	N/A	N/A	N/A	7.9%	N/A	31.6%

4.1 Species Composition

Species composition in the Marina Lagoon continues to be primarily dominated by Eurasian watermilfoil and coontail (Figures 9 and 10, respectively) with a relatively low occurrence of other species such as leafy pondweed, Nitella, and Elodea. However, the frequency of curlyleaf pondweed in the Marina Lagoon has almost doubled from last year. In 2015, the reported frequency of occurrence was 0%; in 2016, the presence increased to 12.2%; and the current 2017 survey shows 21.3%.

The continued dominance of Eurasian watermilfoil and coontail in the Marina Lagoon is likely due to the nature of the waterways. The Marina Lagoon is almost completely surrounded by bulkheads, creating a small zone of shallow waters where Eurasian watermilfoil is often found, and large areas of deeper water channels, where coontail thrives. However, the increase of curlyleaf pondweed is concerning, especially since this species was seen in several deep water samples. In 2016, a large population of curlyleaf pondweed was observed near and in the channel leading to Lake Tahoe.

Lake Tallac was widely sampled again for the 2017 survey and showed changes in species composition. In previous years, Lake Tallac was primarily dominated by coontail and Eurasian watermilfoil. However, this year saw a large drop in the occurrence of Eurasian watermilfoil, from 61% in 2016 to 21% in the current year. However, the 2015 sampling reported an occurrence rate of 42%. The large fluctuations in occurrence could be attributed to the changing water levels in the lagoon. Lake Tallac is the primary storm water runoff collection basin for the Tahoe Island

Park subdivision, which means that its water levels will fluctuate more than that of the Marina and Main Lagoons. Higher water level years, like 2017, which had an average water depth of approximately 8 feet, may provide more desirable habitat for coontail, whereas low water years, like 2016, which had an average water depth of approximately 5 feet (TKPOA 2016a), create better habitat for Eurasian watermilfoil.

Species composition in the Main Lagoon saw the most change for the 2017 sampling. In previous years, the basin was primarily dominated by Eurasian watermilfoil and coontail. Coontail continues to be the most dominate species at 49%, but Eurasian watermilfoil and curlyleaf pondweed are almost equal in presence at 39% and 41%, respectively. The presence of curlyleaf pondweed in the Main Lagoon has increased greatly over the past few years; 3% in 2015, 31% in 2016, and now 41%. This suggests that the species is becoming better established and may start out-competing other species, including natives. However, it should be noted that 2017 was a large runoff and snowmelt year that created cooler water temperatures. The Main Lagoon showed a drop of 3 ^{o}C from 2016 (18 ^{o}C) to 2017 (15 ^{o}C) (TKPOA 2016b, TKPOA 2017b). Curlyleaf pondweed emerges early, typically from turions that had sprouted the previous fall, and can thrive in cooler water temperatures whereas Eurasian watermilfoil thrives in warmer temperatures (Bolduan 1994; DiTomaso 2003). It is possible that the water had not warmed enough by the time of the 2017 sampling for the population of Eurasian watermilfoil to begin growing rapidly.

Figure 9. Eurasian Watermilfoil Composition Map

Figure 10. Coontail Composition Map

4.2 Biovolume

The hydroacoustic scans showed a decrease in the percent area coverage for both the Main and Marina Lagoons (Table 2). The plant biovolume also decreased from 2016 levels.

Table 2. 2016 and 2017 Hydroacoustic Scan Results

	Plant Biovolume		Percent Area Coverage	
	2016*	2017	2016*	2017
Marina Lagoon	76%	41%	98%	77%
Main Lagoon	78%	70%	97%	85%
Lake Tallac	N/A	80%	N/A	91%

*2016 data was taken from August 6-9, 2016

The change in percent area coverage is likely due to the high water levels experienced in 2017. There was a measured increase of almost 5 feet from June 2016 to June 2017 (USGS 2018). Areas are now underwater that were previously dry beach or rock slopes and provided limited habitat for macrophyte growth.

The decrease in plant biovolume is also likely due to the high water year. As stated previously in Chapter 4.1, the cooler water temperatures reduce the growth rate of the plants along with lower light levels in deeper water.

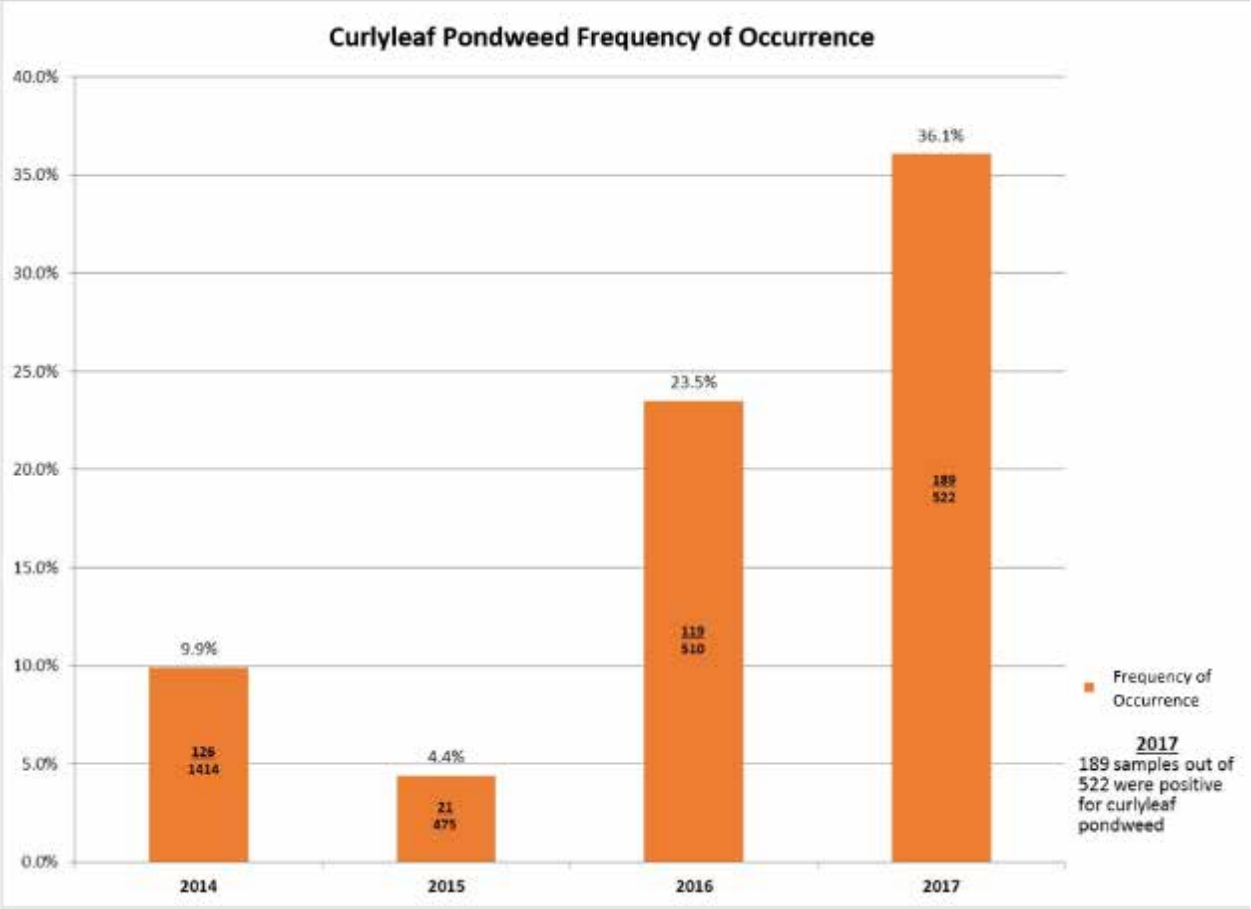
A comparison of biovolume cannot be made for Lake Tallac because no data is available for 2016. However, the higher plant biovolume and percent area coverage should be noted. This is likely due to the less trafficked waters of Lake Tallac, which create stiller waters that promote plant growth.

4.3 Increased Occurrence of Curlyleaf Pondweed

The increasing spread and growth of curlyleaf pondweed presents an issue of concern for the Tahoe Keys and the Tahoe Basin as a whole (University of Nevada, Reno 2015). Curlyleaf pondweed is very adaptable to the climate of Lake Tahoe because it sprouts in the fall, can over-winter under the ice, and begin growing in spring while temperatures are still cool. In addition to tolerating colder and deeper waters, this invasive plant also produces turions during the growing season. Turions are vegetative propagules that can break free from the parent plant and settle in the sediment where they can either sprout in the late-summer to fall, or remain dormant for several years until habitat conditions are adequate for growth.

Previous surveys conducted in the Tahoe Keys showed a limited presence of curlyleaf pondweed. For example, in 2015, there was only 4.4%. However, of the 522 point samples taken in 2017, 189 contained curlyleaf pondweed or roughly 36%. This represents a substantial increase over the previous years, which can be seen in Figure 11.

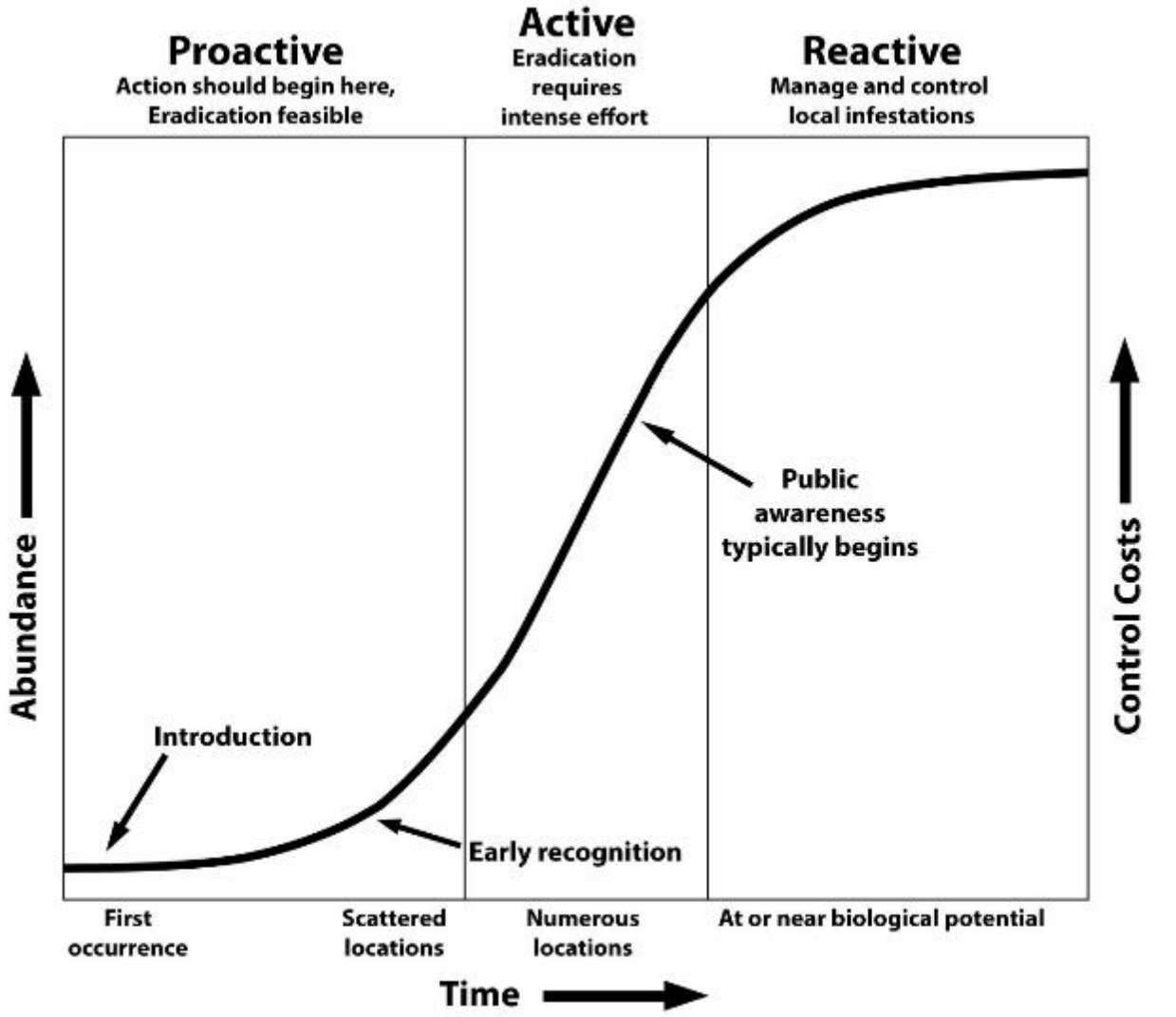
Figure 11. Curlyleaf Pondweed Frequency of Occurrence



Increasing occurrence is not uncommon for invasive species. When a new species is introduced, a lag time often exists between the first occurrence and a large, widespread presence of the species. Figure 12, obtained from the University of California Division of Agriculture and Natural Resources (Bean 2015), shows the typical growth curve of an invasive species, illustrating the lag time (proactive stage) before the species becomes widespread.

A larger study of upper-Midwest plant invasions looked at a number of herbarium records and reported that lag times for species can be anywhere from 3-140 years. This wide range can be attributed to the vast differences in plant morphology. Curlyleaf pondweed was recorded as having a lag time of 8 to 35 years (Larkin 2012). This suggests that the infestations within the Tahoe Keys lagoons have not reached their full potential.

Figure 12. Phases of Invasive Species Invasion and Control
Image property of University of California Division of Agriculture and Natural Resources, 2015.



Ideally, control efforts take place during the proactive stage when the species is first establishing itself. During this time, the infestations are likely small and easily eradicated with minimal effort. However, based on the data collected during the 2016 and 2017 surveys, curlyleaf pondweed may now be in the active stage, meaning that control will likely become more intensive and costly as time goes on.

As can be seen in Figures 13 through 16, the curlyleaf pondweed infestation has grown substantially and spread throughout the lagoons over the past few years.

Figure 13. Curlyleaf Pondweed Composition Map 2017

Figure 14. Curlyleaf Pondweed Composition Map 2016

Figure 15. Curlyleaf Pondweed Composition Map 2015

Figure 16. Curlyleaf Pondweed Composition Map 2014

TKPOA considers the data on curlyleaf pondweed indicate the need for near-term large-scale control, before this species reaches the reactive stage of control (Figure 12) when costs are the highest and full control may be impossible. Continued inaction poses a risk of further curlyleaf pondweed spread around Lake Tahoe.

4.4 Plant Species between the East and West Channels

Due to stakeholder and TKPOA growing concern about the potential spread of curlyleaf pondweed from the Tahoe Keys lagoons into Lake Tahoe, the shore zone between the East and West channels was surveyed on August 1, 2017 to assess and document any macrophyte species present. This data was then combined with data received from the League to Save Lake Tahoe and the University of Nevada, Reno to create Figure 17.

Figure 17. Plant Species Present between Tahoe Keys' East and West Channels

The area between the two boat channels exiting the Keys is mostly free of invasive macrophytes. However, Eurasian watermilfoil and curlyleaf pondweed, along with natives, including Richardson's pondweed and Andean milfoil (not shown in figure), were found in the channels and close to shore near the TKPOA pier.

5.0 CONCLUSIONS

Non-native Eurasian watermilfoil and native coontail are most present in the waterways of the Tahoe Keys Lagoons. Curlyleaf pondweed has demonstrated a relatively rapid expansion in recent years. Since curlyleaf pondweed is capable of surviving and thriving at greater depths than Eurasian watermilfoil, this species may pose a greater ecological threat to Lake Tahoe proper (UNR 2015) because it may actually be selective of cooler habitat conditions (Heiskary and Valley 2012). This 2017 report and other surveys around Lake Tahoe confirm that curlyleaf pondweed is able to become established in the colder, more nutrient limited waters of Lake Tahoe.

TKPOA will continue to conduct the annual surveys. Point sampling, accompanied by the hydroacoustic scans, provides important information on species occurrence as well as on invasive species control method effectiveness and selectivity.

6.0 2018 AQUATIC MACROPHYTE SURVEY PLAN

The annual macrophyte survey in 2018 will use a similar methodology to that used in the 2017 survey. Like the 2017 survey, fewer samples will be taken in the Marina Lagoon as the data over the past few years consistently shows similar occurrences of aquatic plant species and coverage. Data collection points in 2018 for the Main Lagoon and Lake Tallac should remain at or above the number of points collected in 2017. In addition to the point sampling, hydroacoustic scans will again be conducted in 2018, beginning with the onset of the macrophyte growing season (i.e., May). The scanning system will be checked for accuracy and functionality prior to and between sampling events to help ensure the validity and reliability of data collection.

7.0 LIST OF PREPARERS

The following individuals prepared the text presented in this report.

Name	Education	Role
Rick A. Lind SEA	M.A. Geography (Water Resources) U.C. Davis B.A. Geography (Natural Resources) CSU Sacramento	Principal-in-Charge
Jeremy A. Waites SEA	M.S. Coursework, Forestry Auburn University, Alabama B.S. Forestry Auburn University, Alabama	Data Collection, Data Analysis, GIS Mapping
Krystle Heaney SEA	B.A. Geography (Physical) CSU Sacramento	Primary Author
Kristen Hunter SEA	B.S. Biology U.C. Davis	Document Editing
Gregory J. Hoover TKPOA	A.A Natural Sciences Lake Tahoe Community College	Data Collection
Rayann C. La France SEA	B.A. Criminal Justice CSU Sacramento	Document Editing/ Formatting

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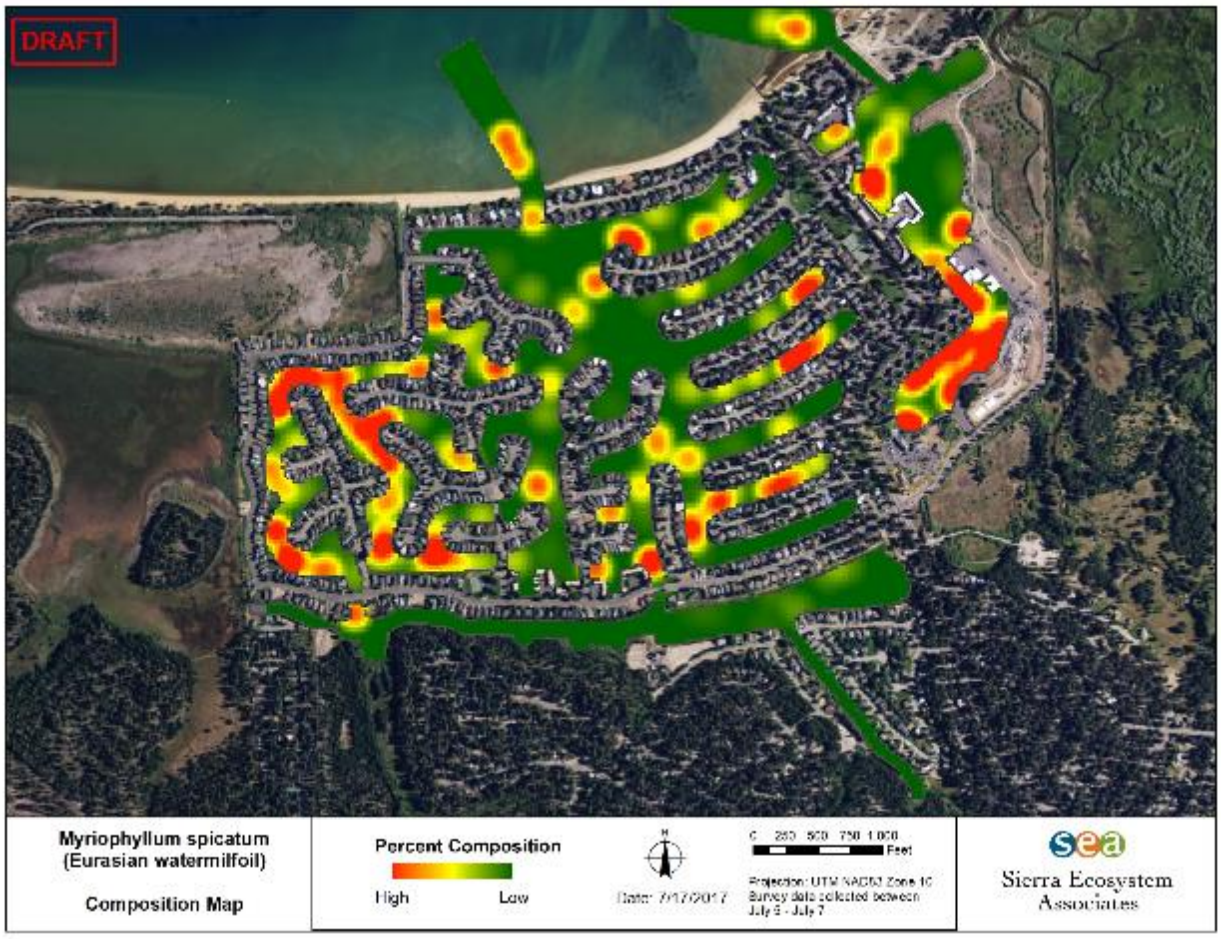
Appendix A

Species Composition Maps


DRAFT
Ceratophyllum demersum
(Coontail)
Composition Map
Percent Composition
High
Low
Date: 7/17/2017
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 6 - July 7
sea
Sierra Ecosystem
Associates


DRAFT
Elodea canadensis
(Elodea)
Composition Map
Percent Composition
High
Low
N
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates


DRAFT
Myriophyllum spicatum
(Eurasian watermilfoil)
Composition Map
Percent Composition
High
Low
N
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates


DRAFT
Nitella sp.
(Nitella)
Composition Map
Percent Composition
High
Low
N
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates


DRAFT
Potamogeton crispus
(Curlyleaf Pondweed)
Composition Map
Percent Composition
High
Low
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates


DRAFT
Potamogeton foliosus
(Leafy pondweed)
Composition Map
Percent Composition
High
Low
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates


DRAFT
Potamogeton richardsonii
Richardsons's pondweed)
Composition Map
Percent Composition
High
Low
0 250 500 750 1,000
Feet
Projection: UTM NAD83 Zone 10
Survey data collected between
July 5 - July 7
Sierra Ecosystem
Associates

Appendix B

Survey Data Tables

Date	Waypoint	Depth_ft	MySp	CeDe	PoCr	PoFo	NiSp	ElCa	PoRi	Afsp	ChSp	FA	WWB	NG	SL	EE	BrSc	Notes	Location
07/05/17	107	15.0	0.00	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	108	15.0	0.00	10.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	109	14.0	5.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	110	18.0	0.00	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	111	14.0	0.00	0.00	95.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	114	12.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	115	14.0	90.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	116	16.0	75.00	0.00	0.00	0.00	10.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	117	15.0	10.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	118	11.0	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	119	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/05/17	120	9.0	0.00	0.00	0.00	0.00	0.00	0.00	75.00	0.00	25.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	121	20.0	0.00	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	122	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	123	7.0	20.00	0.00	50.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	124	17.0	30.00	0.00	60.00	1.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	125	14.0	0.00	0.00	99.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	126	4.0	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	127	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	128	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	129	14.0	0.00	0.00	95.00	3.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	130	15.0	0.00	0.00	75.00	20.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	131	8.0	10.00	0.00	40.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	132	8.0	0.00	80.00	15.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	133	11.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	134	12.0	0.00	30.00	40.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	135	6.0	0.00	0.00	40.00	20.00	0.00	30.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	136	5.0	5.00	0.00	0.00	0.00	20.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	137	10.0	0.00	0.00	0.00	60.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	138	10.0	0.00	0.00	20.00	0.00	50.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	139	6.0	0.00	0.00	80.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	140	10.0	0.00	0.00	20.00	20.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	141	8.0	0.00	0.00	10.00	60.00	25.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	142	10.0	20.00	0.00	40.00	15.00	0.00	20.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	143	12.0	45.00	0.00	5.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	144	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	145	10.0	20.00	0.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	146	10.0	80.00	0.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	147	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	148	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	149	6.0	5.00	0.00	90.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	150	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	151	9.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	152	8.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	153	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	154	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	155	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	156	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	157	10.0	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	158	7.0	0.00	0.00	25.00	0.00	0.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	159	8.0	10.00	0.00	0.00	80.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	160	5.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	161	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West
07/06/17	162	11.0	25.00	5.00	20.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		West

07/06/17	163	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	164	12.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	165	11.0	25.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	166	7.0	50.00	25.00	0.00	15.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	167	14.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	168	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	169	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	170	9.0	10.00	0.00	80.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	171	20.0	0.00	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	172	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	173	9.0	60.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	174	16.0	5.00	90.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	175	10.0	5.00	90.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	176	11.0	5.00	0.00	0.00	0.00	90.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	177	15.0	0.00	0.00	80.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	178	6.0	0.00	0.00	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	179	10.0	0.00	5.00	0.00	0.00	0.00	15.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	180	5.0	0.00	20.00	40.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	181	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	182	4.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	183	10.0	0.00	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	184	12.0	0.00	80.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	185	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	186	5.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	187	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	188	20.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	189	11.0	0.00	75.00	0.00	0.00	20.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	190	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	191	11.0	4.00	0.00	95.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	192	11.0	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	193	13.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	194	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	195	7.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	196	12.0	0.00	75.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	197	16.0	40.00	0.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	198	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	199	6.0	0.00	20.00	0.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	200	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	201	12.0	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	202	9.0	0.00	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	203	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	204	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	205	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	206	11.0	0.00	0.00	50.00	0.00	10.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	207	6.0	5.00	0.00	80.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	208	7.0	0.00	0.00	80.00	0.00	5.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	209	7.0	0.00	90.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	210	7.0	40.00	0.00	20.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	211	12.0	10.00	10.00	0.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	212	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	213	11.0	50.00	20.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	214	5.0	0.00	10.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	215	10.0	50.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	216	3.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	217	10.0	0.00	0.00	1.00	0.00	98.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

07/06/17	218	9.0	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	219	6.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	220	10.0	80.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	221	10.0	70.00	0.00	10.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	222	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	223	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	224	10.0	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	225	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	226	17.0	0.00	99.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	227	18.0	0.00	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	228	8.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	229	12.0	0.00	0.00	20.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	230	11.0	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	231	6.0	10.00	0.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	232	12.0	0.00	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	233	6.0	10.00	40.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	234	7.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	235	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	236	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	237	10.0	60.00	30.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	238	12.0	0.00	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	239	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	240	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	241	8.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	242	4.0	0.00	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	243	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	244	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	245	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	246	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	247	9.0	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	248	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	249	10.0	50.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	250	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	251	11.0	0.00	70.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	252	6.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	253	14.0	0.00	99.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	254	10.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	255	12.0	0.00	99.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	256	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	257	10.0	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	258	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	259	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	260	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	261	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	262	4.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	263	6.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	264	6.0	0.00	0.00	0.00	0.00	40.00	0.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	265	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	266	11.0	0.00	0.00	0.00	0.00	80.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	267	10.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	268	17.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	269	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	270	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	271	10.0	0.00	85.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	272	9.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

07/06/17	273	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	274	5.0	0.00	0.00	5.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	275	10.0	0.00	75.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	276	12.0	10.00	0.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	277	10.0	70.00	0.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	278	8.0	90.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	279	10.0	0.00	65.00	0.00	0.00	0.00	25.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	280	9.0	0.00	0.00	0.00	0.00	70.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	281	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	282	11.0	70.00	10.00	5.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	283	7.0	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	284	9.0	40.00	0.00	10.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	285	7.0	0.00	0.00	0.00	0.00	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	286	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	287	10.0	60.00	0.00	10.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	288	9.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	289	7.0	10.00	0.00	10.00	0.00	40.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	290	7.0	0.00	0.00	40.00	0.00	50.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	291	6.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	292	9.0	0.00	10.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	293	10.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	294	8.0	0.00	0.00	0.00	10.00	0.00	10.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	295	6.0	10.00	0.00	10.00	0.00	60.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	296	9.0	0.00	40.00	0.00	0.00	40.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	297	9.0	50.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	298	11.0	0.00	20.00	0.00	0.00	0.00	30.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	299	10.0	0.00	0.00	0.00	0.00	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	300	10.0	0.00	80.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	301	7.0	0.00	70.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	302	9.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	303	6.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	304	10.0	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	305	10.0	0.00	0.00	0.00	0.00	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	306	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	307	7.0	0.00	0.00	30.00	0.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	308	10.0	0.00	20.00	0.00	0.00	0.00	20.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	309	10.0	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	310	8.0	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	311	11.0	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	312	10.0	0.00	0.00	20.00	0.00	20.00	30.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	313	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	314	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	315	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	316	12.0	0.00	0.00	20.00	0.00	60.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	317	12.0	80.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	318	11.0	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	319	12.0	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	320	9.0	0.00	0.00	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	321	8.0	10.00	60.00	10.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	322	9.0	20.00	60.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	323	7.0	0.00	20.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	324	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	325	10.0	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	326	17.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	327	7.0	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

07/06/17	328	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	329	8.0	30.00	50.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	330	11.0	90.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	331	9.0	90.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	332	12	0.00	95.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	333	7	95.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	334	9	40.00	10.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	335	11	5.00	90.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	336	10	0.00	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	337	14	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	338	12	0.00	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	339	13	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	340	12	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	341	9	25.00	0.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	342	9.0	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	343	10.0	30.00	60.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	344	10.0	40.00	0.00	50.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	345	12.0	40.00	10.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	346	13.0	0.00	75.00	20.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	347	6.0	50.00	25.00	5.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	348	14.0	0.00	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	349	10.0	5.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	350	12.0	0.00	30.00	60.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	351	11.0	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	352	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	353	14.0	50.00	40.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	354	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	355	7.0	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	356	10.0	50.00	30.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	357	13.0	2.00	95.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	358	10.0	20.00	0.00	70.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	359	9.0	75.00	10.00	5.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	360	9.0	0.00	75.00	5.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	361	8.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	362	11.0	0.00	0.00	90.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	363	11.0	15.00	70.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	364	14.0	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	365	12.0	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	366	8.0	25.00	0.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	367	6.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	368	11.0	3.00	2.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	369	12.0	0.00	20.00	50.00	10.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	370	7.0	20.00	0.00	30.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	371	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	372	11.0	0.00	0.00	95.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	373	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	374	9.0	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	375	11.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	376	9.0	30.00	0.00	20.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	377	10.0	45.00	0.00	25.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	378	8.0	95.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	379	12.0	0.00	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	380	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	381	9.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	382	13.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

07/06/17	383	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	384	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	385	11.0	75.00	15.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	386	10.0	10.00	80.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	387	9.0	40.00	0.00	40.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	388	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	389	10.0	75.00	0.00	15.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	390	9.0	70.00	25.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	391	10.0	20.00	40.00	15.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	392	12.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	393	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	394	9.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	395	10.0	25.00	0.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	396	8.0	30.00	0.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	397	14.0	0.00	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	398	10.0	30.00	30.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	399	10.0	30.00	40.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	400	10.0	10.00	15.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	401	12.0	25.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	402	8.0	15.00	10.00	25.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	403	8.0	60.00	0.00	10.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	404	8.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	405	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	406	10.0	40.00	0.00	50.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	407	10.0	20.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	408	10.0	0.00	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	409	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	410	5.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	411	13.0	0.00	90.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	412	9.0	40.00	0.00	40.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	413	11.0	0.00	75.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	414	12.0	40.00	10.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	415	10.0	60.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	416	12.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	417	8.0	10.00	0.00	80.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	418	11.0	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	419	7.0	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	420	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	421	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	422	5.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	423	7.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	424	13.0	0.00	5.00	90.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	425	8.0	5.00	0.00	0.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	426	8.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	427	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	428	12.0	0.00	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	429	12.0	0.00	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	430	13.0	0.00	5.00	0.00	0.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	431	12.0	0.00	3.00	95.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	432	12.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	433	11.0	0.00	20.00	0.00	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	434	11.0	4.00	0.00	95.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	435	10.0	40.00	0.00	10.00	0.00	20.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	436	12.0	5.00	5.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	437	11.0	30.00	40.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

07/06/17	438	12.0	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	439	9.0	10.00	10.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	440	10.0	40.00	0.00	20.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	441	13.0	0.00	0.00	0.00	5.00	90.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	442	12.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	443	12.0	0.00	0.00	60.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	444	8.0	95.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	445	7.0	0.00	0.00	95.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	446	7.0	0.00	0.00	95.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	447	11.0	0.00	0.00	50.00	40.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	448	10.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	449	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	450	11.0	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	451	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	452	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	453	13.0	0.00	2.00	95.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	454	7.0	60.00	30.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	455	8.0	0.00	0.00	40.00	0.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	456	12.0	25.00	0.00	0.00	0.00	50.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	457	11.0	0.00	0.00	50.00	0.00	25.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	458	12.0	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	459	11.0	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	460	12.0	0.00	0.00	10.00	50.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	461	13.0	0.00	0.00	30.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	462	8.0	0.00	0.00	30.00	0.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	463	8.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	464	8.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	465	11.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	466	13.0	0.00	25.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	467	12.0	15.00	0.00	10.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	468	12.0	0.00	0.00	25.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	469	10.0	0.00	0.00	95.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	470	8.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	471	11.0	95.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	472	13.0	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	473	10.0	10.00	70.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	474	11.0	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	475	14.0	0.00	0.00	70.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	476	9.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	477	7.0	5.00	0.00	90.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	478	11.0	5.00	0.00	85.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	479	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	480	9.0	0.00	1.00	0.00	0.00	95.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	481	11.0	40.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	482	10.0	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West
07/06/17	483	12.0	5.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	West

Date	Waypoint	Depth_ft	MySp	CeDe	PoCr	PoFo	NiSp	ElCa	PoRi	Afsp	ChSp	FA	WWB	NG	SL	EE	BrSc	Notes	Location
7/5/2 17	1	6.0	50.00	45.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	2	11.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	3	11.0	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	4	13.0	15.00	80.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	5	11.0	8.00	90.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	6	18.0	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	7	12.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	8	17.0	2.00	98.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	9	17.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	10	15.0	0.00	99.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	11	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	12	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	13	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	14	12.0	45.00	5.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	15	17.0	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	16	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	17	15.0	1.00	99.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	18	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	19	9.0	96.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	20	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	21	6.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	22	8.0	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	23	19.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	24	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	25	10.0	75.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	26	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	27	12.0	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	28	7.0	5.00	0.00	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	29	15.0	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	30	11.0	40.00	50.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	31	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	32	10.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	33	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	34	7.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	35	13.0	80.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	36	14.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	37	12.0	99.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	38	15.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	39	17.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	40	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	41	14.0	10.00	40.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	42	15.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	43	10.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	44	7.0	60.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	45	15.0	95.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East
7/5/2 17	46	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				East

7/5/2 17	47	17.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	48	18.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	49	9.0	35.00	0.00	0.00	0.00	25.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	50	10	50.00	0.00	40.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	51	9	90.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	52	11	75.00	0.00	10.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	53	19	0.00	0.00	5.00	0.00	90.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	54	9	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	55	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	56	8	25.00	0.00	5.00	0.00	45.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	57	20	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	95.00	0.00	0.00	0.00	0.00		East
7/5/2 17	58	16	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	59	9	25.00	60.00	5.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	60	9	70.00	10.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	61	8	20.00	0.00	75.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	62	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	63	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	64	16	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	65	18	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	66	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	67	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	68	15	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	69	10	50.00	0.00	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	70	10	75.00	20.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	71	6	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	72	11	75.00	15.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	73	20	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	74	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	75	18	90.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	76	10	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	77	10	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	78	7	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	79	10	25.00	0.00	0.00	10.00	45.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	80	17	0.00	50.00	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	81	15	10.00	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	82	18	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	83	20.0	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	84	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	85	18.0	0.00	80.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	86	16.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	87	18.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	88	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	89	15.0	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	90	6.0	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	East
7/5/2 17	91	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	92	6.0	40.00	10.00	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	93	2.0	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	East

7/5/2 17	94	8.0	10.00	0.00	50.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	95	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	East
7/5/2 17	96	7.0	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	97	8.0	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	98	7.0	5.00	5.00	80.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	99	10.0	0.00	95.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
7/5/2 17	100	12.0	0.00	80.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		East
07/05/17	101	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	102	9.0	0.00	0.00	0.00	0.00	90.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	103	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	104	12.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	105	11.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	106	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	112	12.0	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East
07/05/17	113	12.0	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	East

Date	Waypoint	Depth_ft	MySp	CeDe	PoCr	PoFo	NiSp	ElCa	PoRi	Afsp	ChSp	FA	WWB	NG	SL	NP	BrSc	Cove	Location
07/07/17	484	7.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	485	9.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	486	10.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	487	5.0	20.00	50.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	488	6.0	20.00	70.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	489	5.0	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	490	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	491	7.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	492	7.0	10.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	493	12.0	20.00	20.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	494	8.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	495	5.0	0.00	60.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		20.00		Tallac
07/07/17	496	5.0	0.00	50.00	0.00	20.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.00		Tallac
07/07/17	497	8.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	498	8.0	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	10.00		Tallac
07/07/17	499	3.0	0.00	20.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		75.00		Tallac
07/07/17	500	5.0	0.00	20.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00		Tallac
07/07/17	501	3.0	0.00	0.00	40.00	20.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	502	3.0	0.00	0.00	10.00	0.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	503	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.00	100.00		Tallac
07/07/17	504	6.0	5.00	90.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	505	6.0	0.00	70.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		10.00		Tallac
07/07/17	506	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	507	9.0	0.00	95.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.00		Tallac
07/07/17	508	11.0	5.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	509	6.0	5.00	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.00		Tallac
07/07/17	510	13.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	511	8.0	0.00	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		20.00		Tallac
07/07/17	512	6.0	0.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.00		Tallac
07/07/17	513	2.0	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		50.00		Tallac
07/07/17	514	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	515	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	516	7.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	517	10.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	518	10.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	519	20.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	520	11.0	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac
07/07/17	521	5.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		Tallac