navimatics

Charts&Tides
User Guide

Contents

Overview

Thank you for choosing Charts&Tides for Mac. Charts&Tides provides comprehensive planning and marine navigational abilities with a modern user interface and unparalleled ease of use. Charts&Tides for Mac is part of the Charts&Tides family of products. Visit our website (navimatics.com) to learn about our other products.

Features at a Glance

Ease of Use

Charts&Tides has been designed for ease of use and to provide the "Mac Experience". Traditional mariner tasks have been simplified in Charts&Tides by focusing on what is important; at the same time tweaking options are provided for users with specific needs.

Dark UI for Mariners

Mariners often find themselves at sea during the night or in other low visibility conditions. For this reason we have designed a modern "dark" UI for Charts&Tides that keeps the spirit of a modern Mac application, but will protect your night vision as well.

No Hassle Charts

Unlike other marine software, with Charts&Tides there is no longer the need to download, store and manage individual charts or load them into your software. Charts&Tides manages all the details for you eliminating the hassle of chart management.

Charts&Tides vector charts are rendered beautifully using our GeoKit engine. The GeoKit advantage is that it can take charts from different sources, purposes and scales and produce a single, continuous, self-consistent chart that looks good at all scales.

ActiveCaptain Integration

Charts&Tides includes integration with the ActiveCaptain service. ActiveCaptain is the definitive source of information about thousands of marinas, anchorages, hazards and other local knowledge that is typically not available on charts.

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Starting the Application

To start the application locate the Charts&Tides icon in the Applications folder and double-click on it.

This will open the Chart Window where most interaction with Charts&Tides takes place. Some versions of Charts&Tides (notably the Mac App Store version) do not come with any preinstalled charts. In this case a Welcome Window will open with instructions on how to purchase charts for use with Charts&Tides (refer to the Chart Store section for more information).

Chart Window

When you launch Charts&Tides the main window that opens is called the Chart Window. This window displays the currently visible chart(s) (this selection can be changed in the Preferences).

Most of your work while planning a trip or while navigating your vessel is done within the Chart Window. The Chart Window allows you to reposition the chart, track your vessel's position, add and edit waypoints and routes and more.
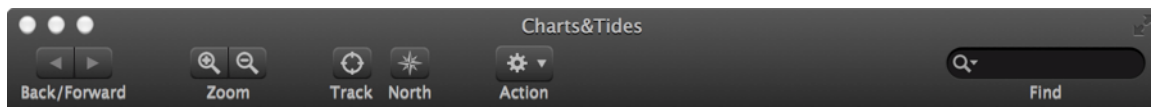
Window Elements

The Chart Window is comprised of the following basic elements:
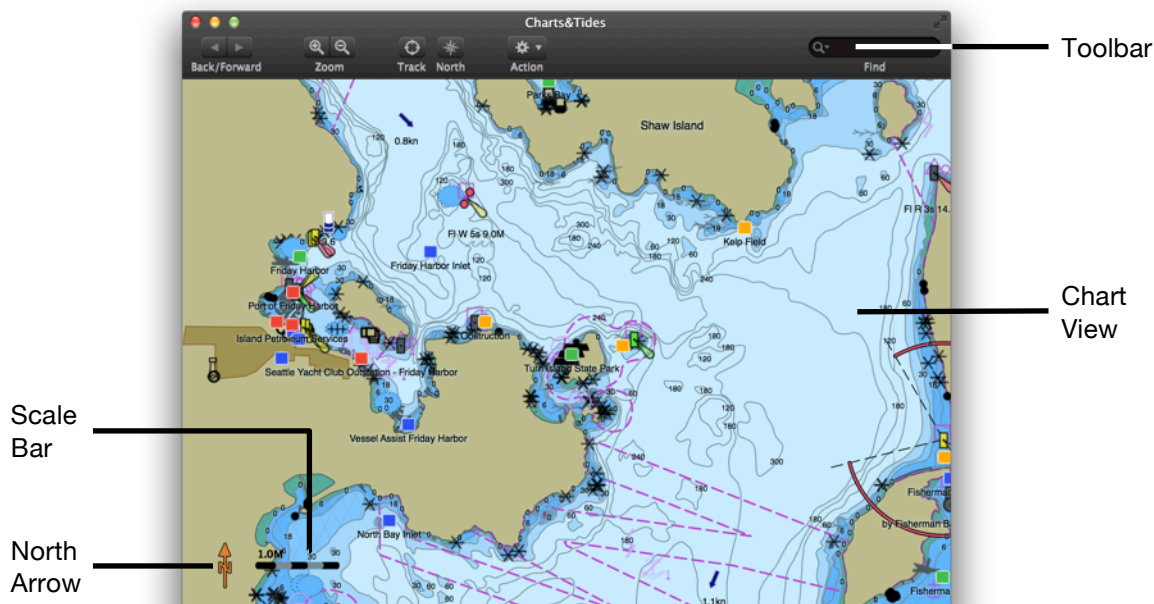
Toolbar

The Toolbar allows you to access a number of basic commands. To customize it, right click and select "Customize Toolbar".

Back/Forward in the position history	Zoom in/out of the chart	Track Vessel and North Button	Action Menu	Find features by name on the chart

Chart View

The Chart View displays your chart(s) and a variety of other information. Beyond the standard marine features, you can access information about tide and current levels, ActiveCaptain markers, etc. Marine features are displayed using standard IHO (International Hydrographic Organization) symbology.

The Chart View also includes a North Arrow and a Scale Bar. The North Arrow shows you where true north lies on your chart. The Scale Bar allows you to quickly judge distances on your chart.

Repositioning the Chart

There are a variety of ways to change the chart position, scale and orientation. You can use the mouse, trackpad, keyboard, or menu and toolbar commands to change your view of the chart.

Moving, Zooming and Rotating

When you are using a mouse:
- Move the chart around by clicking on the chart and dragging it.
- Zoom into the chart by pressing and holding the Alt-button while clicking and dragging the mouse in a left-to-right motion. The mouse pointer will change into a magnifying glass with a plus sign in it. A selection rectangle will appear that shows the area you wish to zoom into.
- Zoom out of the chart by pressing and holding the Alt-button while clicking and dragging the mouse in a right-to-left motion. The mouse pointer will change into a magnifying glass with a minus sign in it. A selection rectangle will appear that shows the area that your current chart view will fit into once the zoom out operation is complete.
- Rotate the chart by pressing and holding the Shift and Alt-buttons while clicking and dragging the chart. The mouse pointer will change into the rotate pointer and the chart will change orientation.

When you are using a trackpad, you can use the Scroll & Zoom trackpad gestures defined in the System Preferences. Specifically:
- Use the scroll gesture to move the chart in all four directions.
- Use the pinch gesture to zoom in and out of the chart.
- Use the rotate gesture to change the chart orientation.

When you are using a keyboard:
- Use the arrow keys to move the chart in all four directions.
- Use the ⌘+ and ⌘- keys to zoom in and out of the chart.

Finally you can access the zoom in and out commands from both the menu and the toolbar.

Moving Backward & Forward

When you reposition the chart you may wish to go back to a previous chart position. You can do so by pressing the Back button on the toolbar or by selecting Chart > Back from the main menu. If you have selected a previous chart position you may also wish to move forward to a more recent chart position. You can do so by pressing the Forward button on the toolbar or by selecting Chart > Forward from the main menu.

Tracking your Vessel

If your computer is connected to a GPS device (see the Preferences section for relevant information), Charts&Tides is capable of tracking your vessel's position and course on the chart. This capability is controlled by either the Track button on the toolbar or the Chart > Start/Stop Tracking command from the main menu.

There are three vessel tracking states:
- No tracking.
- Tracking of vessel position.
- Tracking of vessel position and heading (please note that currently Charts&Tides always assumes that a vessel's heading and track/course are the same).

If you move the chart around while tracking, tracking will be disabled. You can however zoom in and out of the chart while tracking.

Viewing Feature Details

You can view information about the features at a particular position on the chart by clicking the chart on that position. Charts&Tides will display a popover with a list of features in the immediate vicinity of the clicked position.
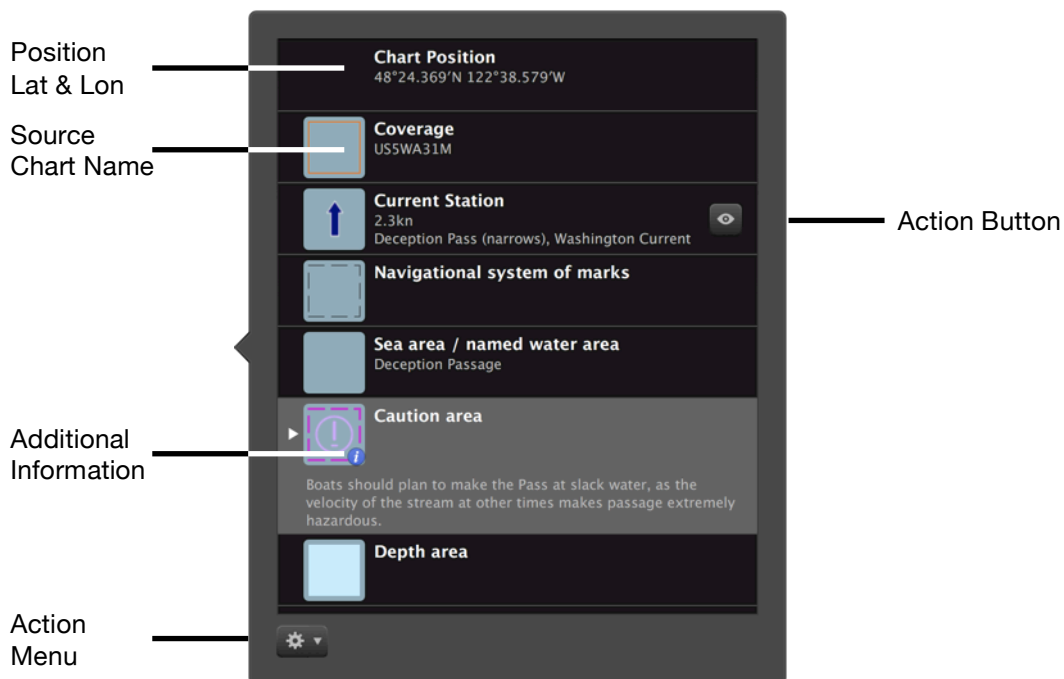
General

The feature list popover includes information such as the latitude, longitude and the source chart name for the clicked position. The list will also include information that is relevant to each individual feature class such as names, depths, etc.

Some features may have additional textual information; this is denoted by a small circled blue "i" icon. Click on such a feature to reveal the extra information.

Other features may have an attached action button. Clicking on the action button will usually open a new window that allows extended interaction with this particular feature (e.g. see the Tide and Current Stations section).

When there are many features of the same class listed they get stacked. To unstack them click on the little white disclosure triangle on the left of the feature.

Finally there is a button marked with a gear sign at the bottom of the list that allows you to access an action menu. From here you can add new features on the chart (e.g. waypoints and routes) or enable Dead Reckoning mode.

Tide and Current Stations

Tide and Current Stations are features that can be used to compute tide levels or current speeds at a specific location. This information can be presented on the chart (see the Chart View Options section) or presented separately in a window that allows you to plot tide levels or current speeds for a specific date and time zone.

Date Picker

Time zone

Plot

Min/Max
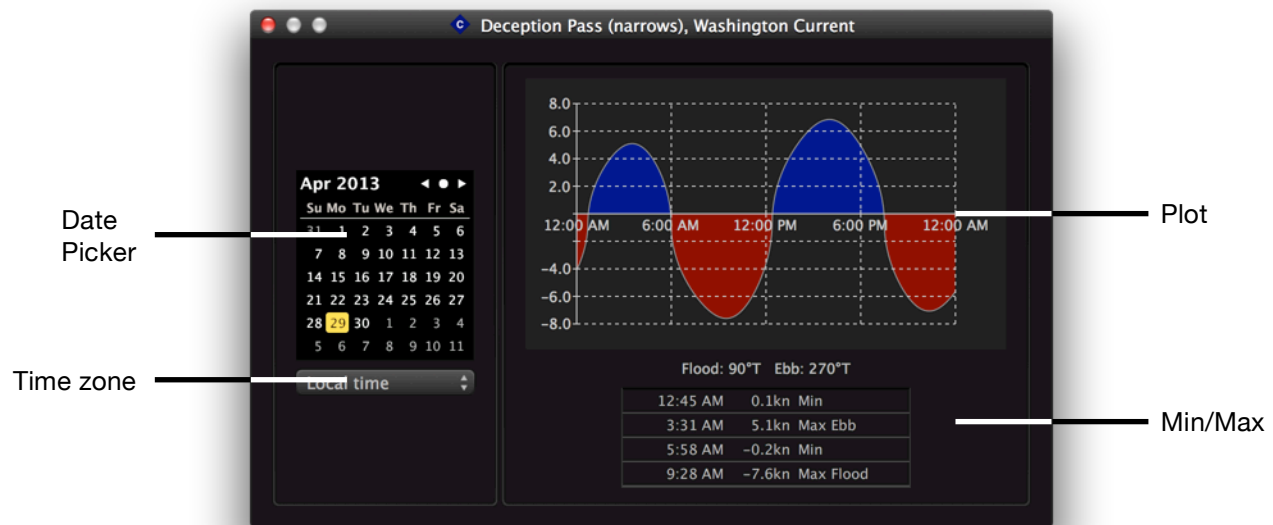
ActiveCaptain

ActiveCaptain is the interactive cruising guidebook that can be found on the web at activecaptain.com. ActiveCaptain provides a wealth of information about thousands of marinas, anchorages, hazards and other local knowledge that is typically not available on charts.

Charts&Tides integrates with ActiveCaptain in a transparent manner (sign in is required, please see the Preferences section). Charts&Tides downloads updates in the background and presents ActiveCaptain markers on the chart. To access information about an ActiveCaptain marker, click on the marker's position on the chart and then click on the action button attached to it in the presented feature list.

This will open a window with detailed information about the marker. The information presented depends on the marker type (i.e. it will be different for marinas, anchorages, hazard and local knowledge markers).
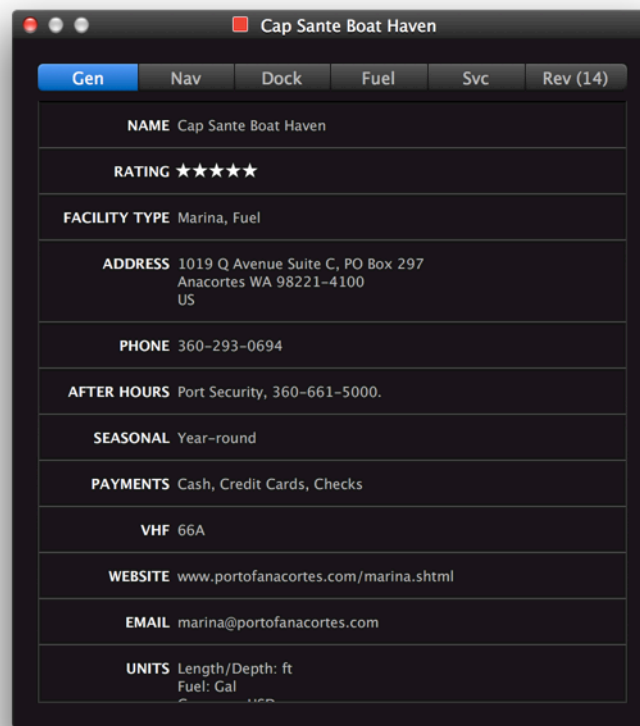
Finding Features on the Chart

Charts&Tides makes it easy to find features by name. Simply click on the Find text control, which is normally located at the right side of the toolbar (unless the toolbar has been customized). Begin typing the desired name and once you have typed in at least two characters Charts&Tides will present you with a list of features with matching names.

The list will be sorted by distance (nearest features first). Clicking on any feature will center the chart on top of that feature.

It is also possible to change the scope of your search by clicking on the magnifying glass icon at the left of the text control.
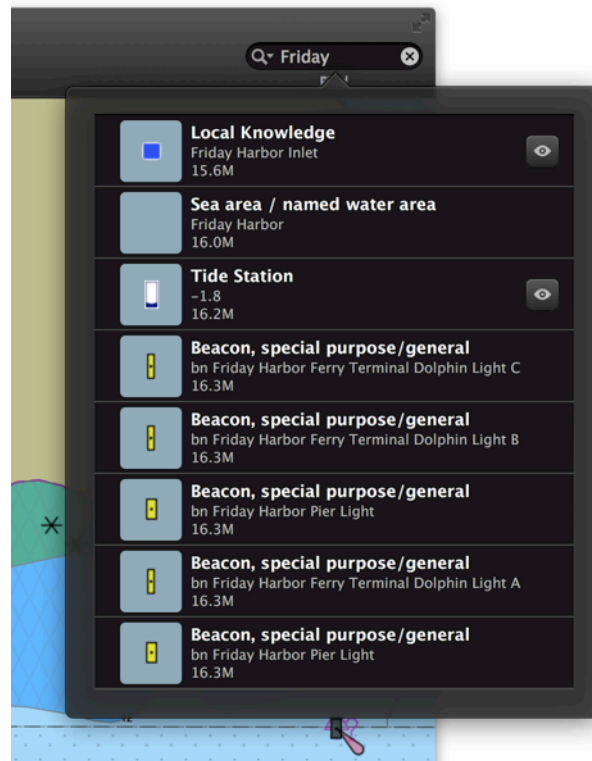
Dead Reckoning Mode

To enable Dead Reckoning Mode click on the chart, then click on the button marked with a gear sign and Set Vessel Position and Velocity. This will present an alert that allows you to set your vessel's position, speed and course. The initial defaults are the clicked position on the chart, current vessel speed and current vessel track, but they are all editable.
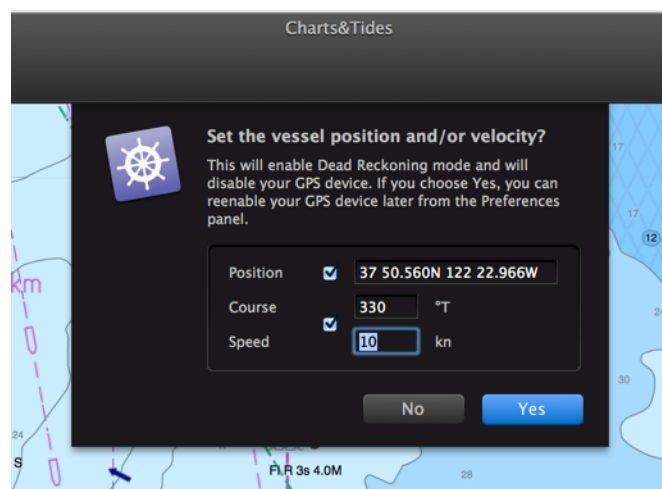
Waypoints and Routes

Charts&Tides allows you to add and edit an arbitrary number of waypoints and routes. The waypoints and routes are visible on your chart at all times and can be used to mark locations or for navigation.

Adding and Editing Waypoints

To add a new waypoint you can select Tools > New Waypoint from the main menu or Action > New Waypoint from the toolbar. You can also click the plus (+) sign button when the feature list popover is visible and select New Waypoint.

This will open a new window that allows you to edit the waypoint icon, name, description and position. While the waypoint window is open, clicking on the chart simply repositions the waypoint.
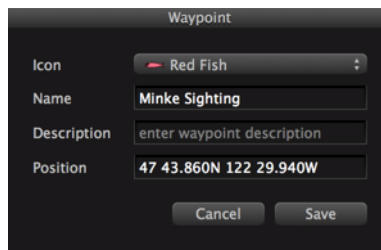
You can also edit or delete an existing waypoint. To do so click on the waypoint on the chart and then click on the attached action button in the feature list popover. This will open the waypoint window and allow you to edit it. It will also include a minus (-) sign button at the lower bottom corner. Click on this button to completely delete the waypoint (with confirmation).

Adding and Editing Routes

To add a new route you can select Tools > New Route from the main menu or Action > New Route from the toolbar. You can also click the plus (+) sign button when the feature list popover is visible and select New Route.

This will open a new window that allows you to edit the route name and waypoints. What happens when the user clicks on the chart, depends on the Edit Mode popup button that appears above the route waypoint list. The options are:

• Add a new waypoint to the end of the route.
• Insert a new waypoint before the currently selected waypoint.
• Reposition the selected waypoint.

Individual waypoints can be deleted from the route (with confirmation) by clicking on the Delete Waypoint button that appears on the left of every waypoint.

Edit Mode Popup

Delete Waypoint Button

Delete Waypoint Confirmation
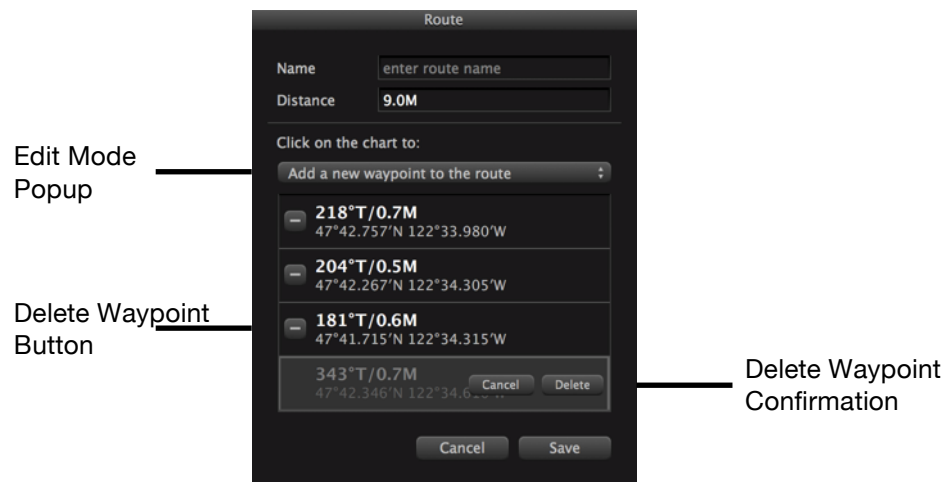
You can also edit or delete an existing route. To do so click on the route on the chart and then select Edit from the attached action button in the feature list popover. This will open the route window and allow you to edit it. It will also include a minus (-) sign button at the lower bottom corner. Click on this button to completely delete the route (with confirmation).

Activating and Deactivating Routes

Activating a route instructs Charts&Tides to begin providing navigation guidance along the activated route. In addition Charts&Tides implements automatic waypoint sequencing for route waypoints. This means that Charts&Tides will automatically switch to the next waypoint when you are within a certain distance from the waypoint (see the Preferences section).

To activate a route, click on it on the chart and then select Activate from the attached action button in the feature list popover. A new window will open that will allow you to activate the route and start navigation from a specific waypoint within the route.

To deactivate a route select Tools > Deactivate Route from the main menu or Action > Deactivate Route from the toolbar.

Man Overboard

An important function while underway is the ability to quickly mark a position as a Man Overboard position. This is particularly useful for real or practiced emergencies.

The Man Overboard function simply adds the special Man Overboard waypoint at the current vessel position. To perform this function select Tools > Man

Overboard from the main menu or Action > Man Overboard from the toolbar. You can also use the ⌘M as a quick shortcut.

Please note that the Man Overboard function will preempt any waypoint or route edits that are currently in progress but not saved. This means that any changes to a waypoint or route will be lost if you have not saved them and you select the Man Overboard function!

GPX Import and Export
It is possible to import waypoints and routes from GPX files. It is also possible to export your waypoints, routes and the past tracks from Charts&Tides to a GPX file.

This functionality is accessible from the File menu. To import a GPX file select File > Import GPX. To export a GPX file select File > Export GPX.

Chart View Options
Charts&Tides allows you to customize your view of the chart so that it is relevant to the task at hand. There are a variety of customization options that control chart colors and symbols, safety contours, tide and current information, vessel information, etc.

These options are controlled by the View Options Panel, which can be opened by selecting Action > Show View Options from the toolbar or View > Show View Options from the main menu.

The View Options Panel has two panes: Chart and Vessel. The Chart pane contains options related to chart presentation. The Vessel pane contains options related to your vessel and those around you.

The Chart pane contains the following options:
• Colors: Controls the chart colors for daytime and nighttime viewing.
• Symbols: Controls the symbols used on the chart. All symbols (with a few exceptions) conform to the International Hydrographic Organization symbology. Paper symbols resemble symbols used primarily on paper charts. Simplified symbols include colored symbols for buoys and other markers and may be easier to interpret on a computer display.
• Safety Contour: This setting is the minimum depth that the user deems safe for his/her vessel to enter. On any particular area Charts&Tides examines the available contours encoded in the chart and selects a contour that is the same depth or deeper as the Safety Contour setting. It then draws areas that are shallower than the selected contour with a blue color (and potentially a diamond pattern) as to indicate that the areas are

potentially unsafe. Note that Charts&Tides does NOT implement the ECDIS requirement to signal an alarm when the vessel is about to enter unsafe waters.

- Deep Contour: This setting is a depth, normally greater than the Safety Contour, that denotes deep water and therefore always safe.
- Shallow Contour: This setting is a depth, normally less than the Safety Contour, that denotes shallow water and therefore always unsafe.
- Sounding Density: Controls the density of soundings on the chart. Soundings become visible at larger scales only.
- Shallow pattern: Depth areas shallower than the safety contour can be drawn using a diamond pattern. This setting controls whether that pattern is visible or not.
- Two depth shades: To identify safe and unsafe water areas (according to the safety contour setting) at a glance select this setting. Safe areas are shown in light blue/white, unsafe areas in blue.
- Contour labels: Select this setting to have contour depths visible on the chart.
- Light descriptions: Controls whether textual descriptions of light features are visible on the chart.
- Tides and Currents: Controls whether to see tide water levels and current speeds on the chart. These are shown for the selected chart date and time. To change the chart date and time, use the popup button to select between "Now" or a specific date and time.
- ActiveCaptain: Controls whether ActiveCaptain features are available on the chart. ActiveCaptain features are only available after you have signed into ActiveCaptain and downloaded the data (see the Preferences section).

The Vessel pane contains the following options:
- Vessel Ring: Controls whether a ring is drawn around your vessel at a specified distance.
- Vessel Vector: Controls whether a vector is drawn to show where your vessel will be in the specified number of minutes based on its current speed.
- Heading Line: Controls whether a vessel heading line is drawn.
- Past Track: Charts&Tides remembers where your vessel has been (see the Preferences section) and keeps this information in the Past Track(s). This setting controls whether the Past Track is visible or not.
- AIS: Controls whether AIS targets are shown on the chart. Note that if you uncheck this, no Closest Point of Approach (CPA) computations will be performed (and no alerts will be posted).
- Target CPA: Mark targets as dangerous if their Closest Point of Approach (CPA) distance is less than what is specified here.
- Target TCPA: Mark targets as dangerous if their Closest Point of Approach (CPA) time is less than what is specified here.
- Lost Target Timeout: Mark targets as lost if they have not transmitted any AIS message for the time specified here.
- All target vectors: Controls whether to show or hide target vectors for all targets (including non-dangerous ones).
- Stationary/slow moving targets: Controls whether to show or hide slow moving targets.
- CPA alerts: Controls whether to post Closest Point of Approach (CPA) alerts. Alerts can optionally be spoken or posted to the OS X Notification Center.

Vessel
Controls

AIS
Controls
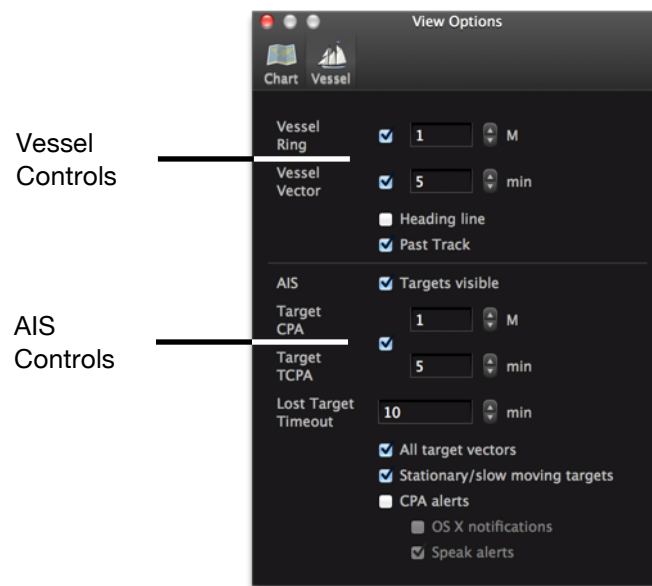
Instrument Panel

The Instrument Panel presents information about your vessel's current position, speed and track/course. The panel can also be extended to present information about the next waypoint in the currently activated route.

Vessel Position,
Speed and Track

Status LED
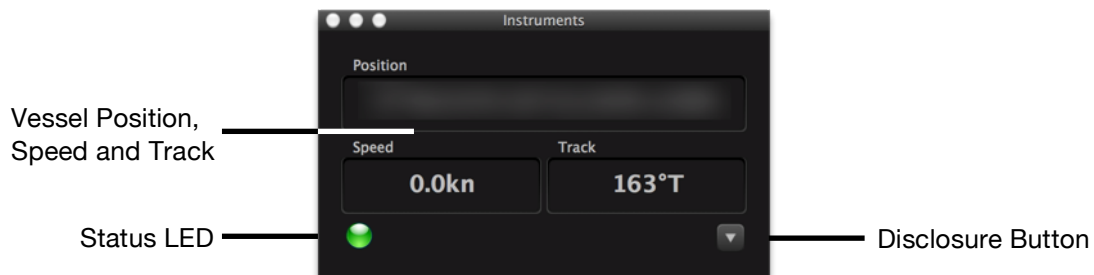
Disclosure Button

To extend the panel press the Disclosure button. If there is a currently activated route, the extended panel will present the following information about the next waypoint:

- Distance from the vessel to the next waypoint.
- Bearing from the vessel to the next waypoint.
- VMG: Velocity Made Good
- DTK: Desired TracK
- ETE: Estimated Time Enroute
- XTE: Cross-Track Error

The Instrument Panel also includes a status LED that is useful to quickly determine the status of the GPS signal. A green LED means everything is functioning properly; a yellow/orange LED means the status is currently unknown; a red LED means that there is a problem with the GPS device or signal.

Preferences

The Preferences panel in Charts&Tides is available by selecting Charts&Tides > Preferences from the main menu. Here you can adjust settings that control various aspects of Charts&Tides functionality.

Charts

The Charts pane lists all charts that you currently own and allows you to select which ones you would like to have visible in the Chart Window.
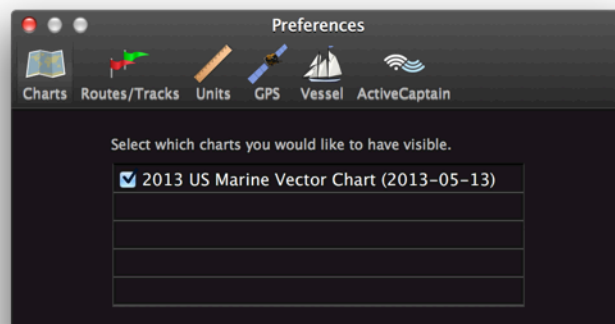
The Mac App Store version of Charts&Tides also includes a button in this pane that allows you to access the Chart Store and purchase charts. Refer to the Chart Store section for more details.
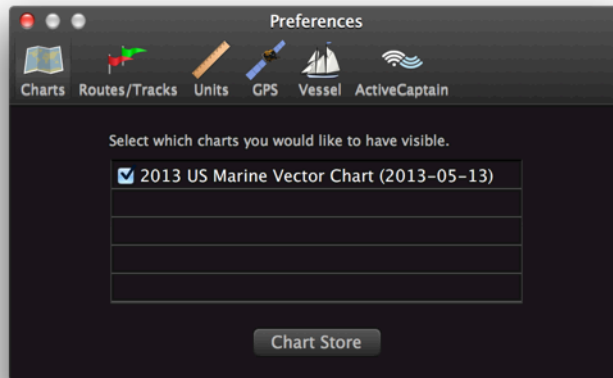

Routes and Tracks

The Routes and Tracks pane has the following settings:
- Arrival Circle: Charts&Tides implements automatic waypoint sequencing for route waypoints. This means that Charts&Tides will automatically switch to the next waypoint when you are within a certain radius from the waypoint. This radius is the Arrival Circle setting.
- Past Tracks: Charts&Tides maintains two tracks of positions where your vessel has been; these are called the past tracks. The primary past track is updated every minute and gives an accurate picture of where your vessel has been in the last few hours. The secondary past track is updated every hour and gives a general picture of where your vessel has been in the last few months. The settings here control the duration that the past tracks are maintained for.

Note that changes to the Routes and Tracks pane are NOT applied immediately. Because they are potentially destructive (e.g. by changing the duration of the primary past track from 24 to 12 hours one loses a large portion of the primary past track), there is an extra confirmation step that appears when closing the Preferences panel or changing away from the Routes and Tracks pane.
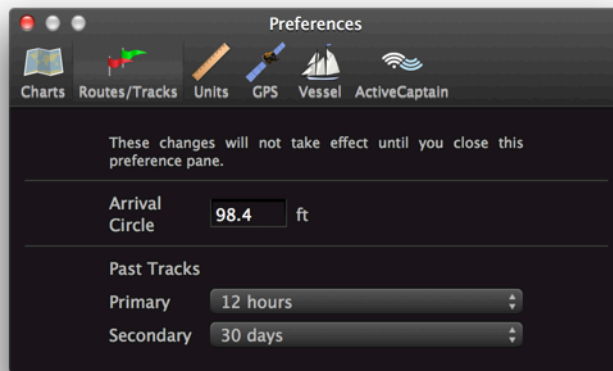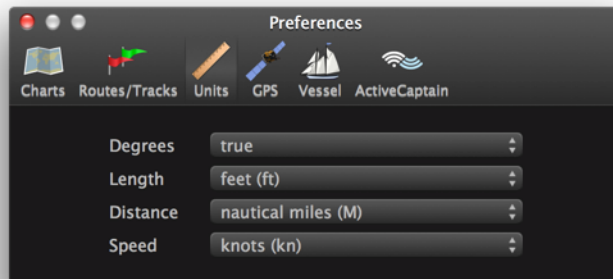
Units

The Units pane controls the measurement units used by Charts&Tides throughout the application (please note that this does not apply to ActiveCaptain information displays).

The following units can be changed:
- Degrees: true or magnetic
- Length and depth units
- Distance units
- Speed units

GPS & AIS

The GPS & AIS pane allows you to configure external devices for use with Charts&Tides. Charts&Tides supports NMEA 0183 compatible devices accessible as serial ports or TCP/IP endpoints and devices that are accessible through the GPSD daemon. It also supports OS X Location Services and has a Dead Reckoning mode.

To connect an NMEA 0183 compatible device to your Mac follow the manufacturer's instructions. Bluetooth devices will usually be connected using the OS X Bluetooth Setup Assistant. USB devices may require the installation of a manufacturer supplied device driver. Either Bluetooth or USB devices will be assigned a serial port. Select "NMEA 0183 over serial port" for the GPS popup button and then select the serial port path for the Path popup button.

If your device is not connected directly to your Mac, but is accessible through a network, you can still use it with Charts&Tides. If the device emits NMEA 0183 sentences, select "NMEA 0183 over TCP/IP" for the GPS popup and then enter the network address of the device. If the device is accessible through the GPSD daemon, select "GPSD" for the GPS popup and again enter the network address of the device.

You can also select "OS X Location Services" in the GPS popup button to use your Mac's built-in Location Services. The operating system will display an alert to confirm that you wish to allow Charts&Tides to receive Location Services. Note: at the time of this writing OS X Location Services simply use Wi-Fi information to find the location of your Mac and cannot be used for true navigation.

Finally Charts&Tides includes a Dead Reckoning mode that can be enabled from here. However it is usually best to enable Dead Reckoning by clicking on the chart and then using the action menu in the presented popover. Refer to the Dead Reckoning section for more information.
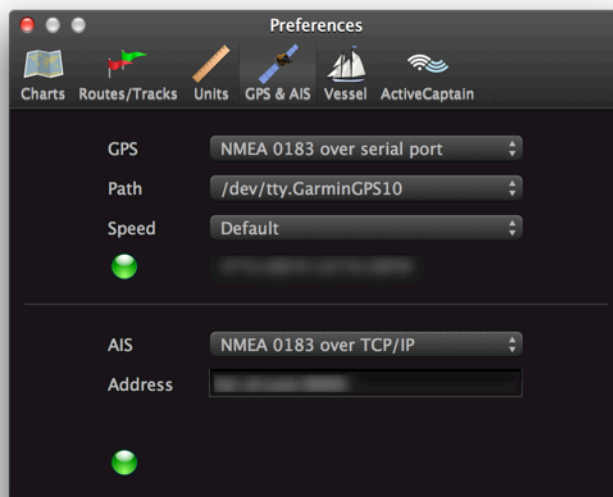
Vessel

The Vessel pane can be used to enter information about your vessel. The vessel's name, dimensions and antenna position can be entered here. Charts&Tides will use this information to depict your vessel's dimensions and shape on the chart under large scales!
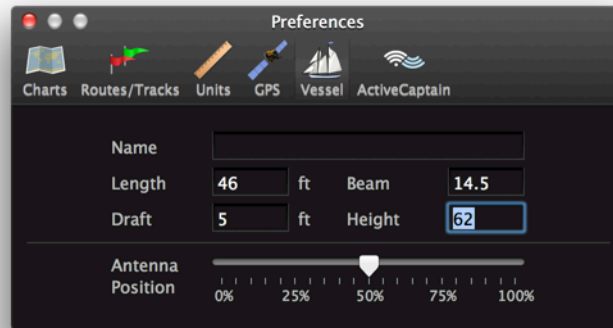
ActiveCaptain

The ActiveCaptain pane can be used to sign into ActiveCaptain and control the schedule that you would like to receive ActiveCaptain updates.
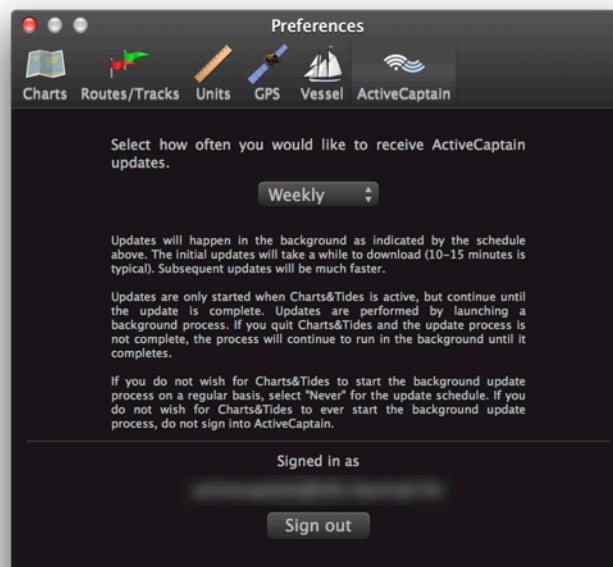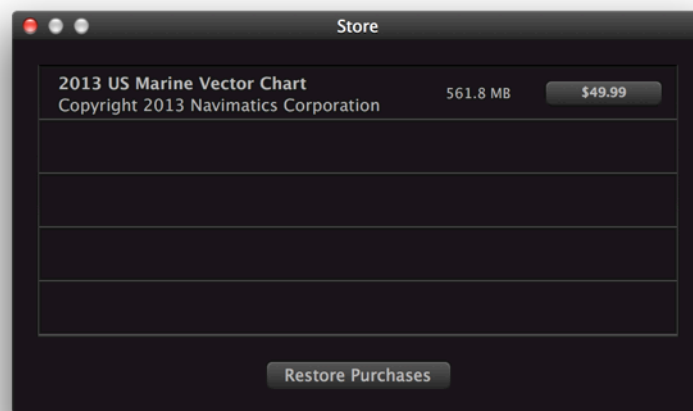
Chart Store (Mac App Store Only)

The Mac App Store version of Charts&Tides includes a Chart Store that allows you to purchase charts for use with the application. To access the Chart Store select Charts&Tides > Chart Store from the main menu.

This will open the Chart Store window which lists all available charts for purchase. The name, description, download size and price are listed for each chart. Charts that are already installed are marked as such.

Clicking on the price button will initiate the Mac App Store in-app purchase process. You will be required to enter a valid Apple ID and password. Once the purchase process is complete, Charts&Tides will begin to download your newly purchased chart. It is recommended that you let Charts&Tides complete the download and install before quitting. However if you choose to quit Charts&Tides while it is downloading a chart, Charts&Tides will retry the download once you restart it.

If you have previously purchased a chart (for example on another computer) and you choose to purchase a chart again you will **not** be charged a second time for your download.

There is also a "Restore Purchases" button that allows you to restore any prior purchases. Please note that this will attempt to download and reinstall all charts that you have previously purchased, which can be a potentially lengthy operation.