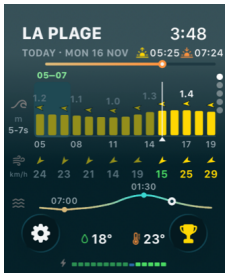
Surf Dawn
User manual

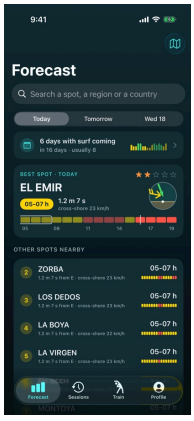
For Garmin watches, Apple Watch and iPhone











16 November 2026

The apps

Surf Dawn is three apps for your Garmin watch that work together, and an iPhone app that carries the Apple Watch app inside. They all share the spots, the best-hours calculation, the colours and the wording:

App	What it's for	How to open it
The face	See at a glance how the sea is at your spot: waves, wind, tide, water, air, sun and battery	It is the watch face
Forecast	See the day hour by hour and which hours are the best; in the morning, an alert with the day's best spot	Touch and hold the face, or from the app list
Session	Record your session, count your waves, find your way back to the spot and save everything to Garmin Connect	Touch and hold the water temperature, or from the app list
Apple Watch	Forecast, Today, Session and Train (routines and apnea) in a single app, the morning alert, the complications and the Smart Stack	The Surf Dawn app on the watch, which comes with the iPhone one
iPhone	Each spot's week, your sessions with their waves on the satellite, Train (routines and apnea) and your profile; it receives the sessions from the Apple Watch and from Session on a Garmin	The Surf Dawn app on the iPhone

Getting started

With a Garmin (with the Apple Watch, see its getting started):

1. **Install the three apps** (see Install).
2. **Put the face on:** hold **MENU** (the middle button on the left) → **Watch Face** → choose **Surf Dawn** and press **START**.
3. **Keep your phone nearby** with the Garmin Connect app. Your spot's data arrives in a few minutes; until then the face says "LOADING".
4. **Choose your units and your background** in each app: on the face from Customize, and in Forecast and Session by holding **UP**. They come set to metres, km/h and the Sea background.
5. **Load your boards** on the phone: Connect IQ app → Surf Dawn Session → Settings → Boards. Session doesn't ship with any boards; if you don't load them, sessions are recorded without a board.
6. **Tell it how you surf:** in Session, by holding **UP**: **Stance** (Goofy by default, or Regular) and **Watch on** (your wrist, left by default). With your stance, each wave is logged as frontside or backside.
7. **Check the forecast:** touch and hold the face. The three best hours of the day come marked.
8. **Before you go in the water,** open Session, wait for the satellite at the bottom left to turn **green** and press **START**.
9. **In the water you don't need to touch anything.** If you want, press **BACK twice** after each wave to mark it: that is how the watch learns to count your waves. With DOWN you go from the session to the compass pointing back to the spot, the forecast and your waves (UP goes back).
10. **When you come out: START → Save → START**. Look at the summary, give it stars and tags, and that's it: it is saved in Garmin Connect.

A tip for your watch: under **Display → During activity**, choose **Always on**, so you can see the session without touching anything.

The buttons

Supported Garmin watches have five buttons: on the left **LIGHT** (top), **UP** (middle; held down it is **MENU**) and **DOWN** (bottom); on the right **START** (top) and **BACK** (bottom).

Button	Forecast	Session, before entering	Session, in the water
START	Request the data again	Start the session	Open the menu (Save, Pause, Waves…)
BACK	Exit	Exit	Nothing; **twice** marks a wave
UP	Choose the spot	See the day's conditions	Previous page
DOWN	The Today page: the day hour by hour	Menu: routines, apnea (test and CO2 and O2 tables) and Settings	Next page
UP held (MENU)	Settings	Settings	Settings
LIGHT held	Watch controls: light, inReach, SOS	same	same

The face doesn't use buttons: on watches with a touchscreen, touching and holding it opens Forecast, Session, or the watch's weather or battery (Gestures).

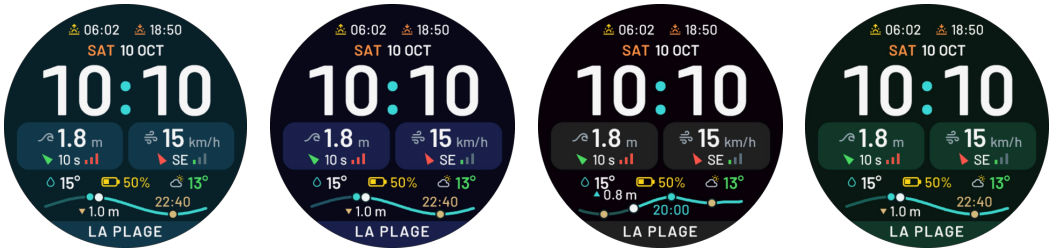
The Surf Dawn watch face

A watch face with hands (or with the time in digits) that shows you the sea at the spot where you are: waves, wind, tide, water and air temperature, the sun and the battery. It picks the nearest spot on its own and updates itself every hour (every 15 minutes between 5 and 10 in the morning).

It has four backgrounds: **Sea**, **Night**, **Graphite** and **Forest**.



And the same information with the time in digits, big and easy to read (see Time in digits):



What you see

Where	What it is	What it's for
Top	The time of the next sunrise (yellow sun) and the next sunset (orange sun)	Planning your first and last session
Top middle	The battery: green (over 50 %), yellow (20 to 50 %) or red (under 20 %)	
Circle with the droplet	The sea temperature. The **droplet takes the colour of the water**, as in Session: blue when cold (under 13°), teal (13 to 17°), green (17 to 21°), yellow (21 to 25°) and orange (25° or more)	Choosing your wetsuit
Circle with the weather	The air temperature and the weather icon (sun, clouds, rain…), the same as the watch's weather when you're near the spot. The **colour of the number is the sun (UV)**: white with no sun, green low, yellow moderate, orange high, red very high, violet extreme	Knowing whether you need sunscreen
Left subdial	The **waves**: big height (metres or feet) with the period below ("10s"). The little marker on the edge shows **where they come from** and, with its colour, whether they reach your beach. The period's colour tells you **how much energy arrives** (see below)	Seeing the size, whether the swell arrives and whether it has power

Where	What it is	What it's for
Right subdial	The **wind**: speed (km/h or knots) and where it blows from ("SE"). The marker's colour tells you whether it is offshore, cross-shore or onshore; the letters', **how hard it blows**	Seeing whether the sea is clean
Date capsule	The day and the date. It moves out of the way by itself so the hands don't cover it	
Bottom curve	The **tide** for the next hours: the turquoise dots are high tides, the sand-coloured ones low tides, with their time. The little white triangle is now, with the current height below it	Knowing whether it is rising or falling and when it turns
Curved band	The name of the **spot**. A little turquoise dot on the left means you chose it yourself (fixed)	Knowing which spot the data is for
Teal hand (if you turned it on)	The **home time** while you travel, with a sun or a moon at its tip	Knowing the time at home without doing the maths. See Home time
Near the centre (in Digital, in a pill next to the date)	Only when something is up: "LOADING" (the spot's data hasn't arrived yet), "4 H AGO" in red (the data is hours old and the hourly forecast that was downloaded has already run out: the numbers turn grey; "2 D AGO" if it is days) or a crossed-out phone (the watch isn't connected to the phone)	Knowing whether the numbers are up to date

The colours

Each subdial has two colours that say different things. **The marker on the edge** (in Digital, the arrow) says whether that direction works for your beach:

Colour	Waves	Wind
Green	They come in head-on to the beach	Offshore: blows from the land, the sea stays clean
Yellow	They come in at an angle	Cross-shore: blows from the side
Red	They hit it from the side or from behind: the beach is blocked	Onshore: blows from the sea, chopping it up

Each spot knows which way its beach faces; that is what picks that colour.

The period and the wind's letters (in Digital, the bars) say how much there is:

- **Waves:** the energy that reaches your beach, with Forecast's seven colours: grey FLAT, blue MINIMAL, green LOW, yellow MEDIUM, orange HIGH, red STRONG and violet BIG.
- **Wind:** how hard it blows: green under 20 km/h, yellow up to 30 and red at 30 or more.

On Tuesday 10 November 2026 at La Plage, 0.8 m and 9 s from the southeast came in head-on (green marker), but brought little energy (green period, LOW). A 32 km/h offshore wind has a green marker and red letters: it blows from the good side, but hard.

Time in digits

In Customize → Time → **Digital**, the face stops looking like a chronograph and becomes big and easy to read: the same data, without minute marks, numerals or subdials, the time almost twice as tall and no small text.

Where	What it is
Top	The next sunrise and the next sunset
Below it	The day and the date. Next to them, in a pill of its colour, the warning: "LOADING" in teal, "4 H AGO" in red (the numbers turn grey), the crossed-out phone in red (no phone) or, when travelling, the little house with the home time in teal
Middle	The time, with the colon in teal
Left card	The **waves**: the height in big type (metres or feet) and, below it, the period ("10 s") with an **arrow pointing where the waves are going**
Right card	The **wind**: the speed (km/h or knots) and, below it, where it blows from ("SE") with an arrow pointing where the wind is going
Bars next to the arrow	**How much there is**, in their number and their colour (The colours). For the waves, the energy that reaches your beach, the same as in Forecast: none if it is FLAT, 1 if it is MINIMAL or LOW, 2 if it is MEDIUM and 3 if it is HIGH or more, in the energy's colour. For the wind, its speed: none under 8 km/h, 1 up to 20, 2 up to 30 and 3 at 30 or more, green up to 20, yellow up to 30 and red from 30
Under the cards	The water temperature (with the drop in the colour of the water), the battery and the air temperature (with the weather icon and the colour of the sun), as on the face with hands
Curve	The **tide** from 4 hours ago to 8 ahead. What has already gone by is dimmed. The white dot is now, with the height next to it: ▼ if it is falling (sand) or ▲ if it is rising (teal). It also shows the time of the next high tide (teal) or low tide (sand)
Bottom band	The name of the **spot**. A little teal dot on the left means you picked it (fixed). If the name doesn't fit it goes smaller and, if it still doesn't fit, cut short with a full stop

The arrow points where the waves and the wind are going, as on Windguru: with waves and wind from the SE, it points NW. The letters ("SE") still say where the wind blows from. It is the opposite of the marker on the face with hands, which shows where they come from.

The arrow and the bars say different things. The arrow, with its colour, says whether the waves come in and the wind blows well for your beach; the bars, with their number and their colour, how much there is (The colours). On Tuesday 10 November 2026 at La Plage, 0.8 m and 9 s from the southeast came in head-on (green arrow), but they were LOW: one green bar. The 20 km/h northeast wind was cross-shore (yellow arrow), with two yellow bars.

At rest (always on), Digital shows the date, the big time in thin grey type, and three rows: waves ("1.8 m · 10 s · SE"), wind ("15 km/h · SE") and the next tide, with ▲ if it is a high tide or ▼ if it is a low tide. It doesn't show the spot.



Always on



When the screen is at rest (AMOLED displays with "always on" enabled on the watch), the face switches to a dark grey version that barely uses any battery: date, time and three rows with an icon (with the time in digits, the one in Time in digits): - **Waves:** height, period and where they come from. - **Wind:** speed and where it blows from. - **Tide:** the next one, with ▲ if it is high tide or ▼ if it is low tide, and its time.

Everything shifts a tiny bit every minute so the screen doesn't burn in. At rest the stale-data warning isn't shown.

Home time

When you travel, one more teal hand shows the time at home. It comes off: turn it on in Customize → **Home time**, or on the phone (Connect IQ app → Surf Dawn → Settings).

- **Where home is:** one of 21 cities from west to east, from Honolulu to Auckland (Montevideo, Buenos Aires, São Paulo, Santiago, Lima, Lisbon, Madrid, Bali, Sydney…), or **Here**, which keeps where the watch is at that moment: choose it at home before you leave. Each place is a position and the watch knows its time zone and daylight saving time, so the home time changes by itself when daylight saving starts or ends there. In the list, each city shows today's offset from UTC.
- **Home hand** (in Customize or on the phone):
  - **12 h · sun and moon** (default): it reads like the hour hand and reaches the hour markers, the ring with the least data. At its tip, a sun when it is day at home (6 to 18) or a moon at night.
  - **24 h · classic**: the classic GMT, one turn a day, pointing to a teal 24-hour scale that appears on the rim (24 at the top, 12 at the bottom). The rim darkens like a bezel, and the 12, 3, 6 and 9 become bars.
- **At home nothing changes:** when the watch is already on home time there is no hand and no scale.
- The date capsule keeps clear of the home hand too.
- **Time in digits:** instead of the hand, a little house and the home time in teal, in a pill next to the date (if there is a warning, such as LOADING, the warning goes there).
- **Always on:** the little house and the home time in grey, above the date.

Gestures: touch and hold

On watches with a touchscreen, touching and holding the face opens the other apps:

Where you hold	What opens
The water temperature	Session, to record a session (its Home screen tells you the wetsuit for that water)
The air temperature	The watch's weather
The battery	The watch's battery page
The band with the spot name	The spot picker in Forecast. The spot you choose also carries over to the face
The top row (sunrise and sunset)	inReach messages, if your watch offers them for watch faces; otherwise, Forecast
Anywhere else: waves, wind, tide	The day's Forecast

In Digital, the water, the battery and the air are the row under the cards, and the cards and the tide open Forecast. If Session isn't installed, the water temperature opens Forecast. If Forecast isn't installed, holding the band moves on to the next spot in the same zone (and after the last one, to Automatic). On watches without a touchscreen, open Forecast and Session from the app list.

Customize

Hold **MENU** (the middle button on the left) → **Watch Face** → with Surf Dawn on screen, **START** → **Customize**:

Option	Values (defaults in bold)	What it changes
Spot	**Automatic** or a fixed spot	Automatic shows which one it is choosing ("Active · LA PLAGE"). Below are the 30 nearest spots from the zones the watch has, with their break type and distance. Choosing one makes it **fixed** until you go back to Automatic
Zones	The watch's zones	How many spots each one has and whether it came with the face or was downloaded. Choosing a downloaded one deletes it (it asks for confirmation), including the one in use (the spot goes back to Automatic); it downloads itself again when you are there
Time	**Hands**, Digital	See Time in digits
Home time	**Off**, Here or one of 21 cities	One more hand with the time at home: see Home time. Below it says the city and the time there
Home hand	**12 h · sun and moon**, 24 h · classic	How the home time is shown
Background	**Sea**, Night, Graphite, Forest	The background colour. Graphite, nearly black, uses the least battery
Waves	**Total**, Swell	Total = the whole sea, the groundswell plus the wind waves (it is Windguru's "Wave" row). Swell = the groundswell only, with its period and direction
Height (waves and tide)	**Metres**, Feet	
Wind	**km/h**, Knots	
Version	(read only)	The installed version, the same as in the store ("1.7.1"). With "dev" at the end, it was loaded by cable

When you change spots, the data arrives in a few minutes; meanwhile you see "—" and "LOADING".

How it picks the spot

- Spots come in **zones** of up to 60 (Mar del Plata, Oahu's North Shore, Gold Coast, Mentawai…): over 2,000 spots in about 200 zones around the world. The face ships with Uruguay's, from Montevideo to Chuy: Canelones and Montevideo (Playa Honda, La Pantalla and the Costa de Oro, from El Pinar to Jaureguiberry), Maldonado (from Punta del Chileno to José Ignacio, with the Brava's numbered beach-access stops) and Rocha; **it downloads the rest by itself** when you arrive, Florianópolis and Praia do Rosa included: the first time in a new place it takes about 10 minutes (first it looks up which zones are there and then downloads yours) (you see "—" and "LOADING") and from then on it stays saved. It keeps up to 10 zones besides the built-in ones; when there is no room, it deletes the one you haven't used for the longest. Of a zone with more than 25 spots (such as the US Northeast or Sydney) it keeps the 25 nearest to you, plus your fixed spot if you chose one: the face doesn't have the memory for more. When you move away from those spots, it downloads the zone again around the new place.

- It picks the **nearest one to where you are**, if it is less than 25 km away. It doesn't turn the GPS on: it uses the last location the watch has and checks it every 10 minutes. If you haven't done a GPS activity, that location is the one the phone passes to it and it can be far off (in Punta del Este it was once 19 km away): if the face shows a spot that isn't yours, open Session until the GPS turns green, and check that Garmin Connect has precise location on the phone.
- If you chose a **fixed** spot, it uses that one.
- If there is no spot nearby, it uses the **fallback spot**. By default it is La Plage. With the app installed from the store, you change it on the phone: Connect IQ app → Surf Dawn → Settings (name, latitude and longitude out at sea, and which way the beach faces, in degrees).
- If you chose, in Forecast, a spot from a zone the face doesn't have, it downloads the zone and then switches to that spot.
- Every update also downloads the data for the neighbouring spots in the zone (up to 8, within 25 km). That is why switching to a spot next door is instant. A distant one takes a few minutes: Garmin only allows background updates once every 5 minutes.
- Every three hours (or when the spot changes), the update also brings the **hourly forecast** for the spot in use for the next 30 hours (waves, wind, temperature and sky); the models run every six. Without the phone, the face steps forward to the current hour: at 15:00 it shows what was forecast for 15:00, even if the last download was from the morning. The numbers only turn grey when those hours run out.
- To download new data the watch needs the phone nearby with the Garmin Connect app.

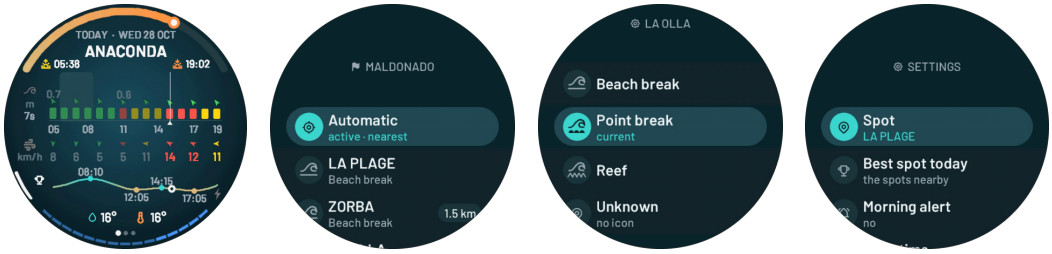
On other watches

- **MIP displays** (fēnix 7, Forerunner 955 and 255, fēnix 8 and 9 Pro Solar, Enduro 3): flat colours and no second hand. These watches' displays never turn off, so at rest you still see the full face.
- **Instinct Crossover AMOLED:** it has real hands, so the face draws neither its own hands nor the time in always-on mode, and it has neither the Time nor the Home hand option: the home time shows with the little house, near the centre.
- **Watches without a touchscreen** (Forerunner 255 and 255 Music, Instinct 3 AMOLED, Instinct Crossover AMOLED): they don't have the touch-and-hold gestures.

The full list is in Supported watches. Where each number comes from: Data and models.

Surf Dawn Forecast

Your spot's forecast for the day, hour by hour, on a single screen: waves, wind, tide, water and air, with the three best hours marked. It uses the same models as Windguru and the official tide tables. If you want, every morning it tells you which spot near you is the best one today (The morning alert).



Opening it

- From the Surf Dawn face: **press and hold the face** anywhere (outside the name band, the top row and the temperatures).
- From the face, holding the **name band**: opens the spot picker directly.
- From the watch's app list: "Surf Dawn Forecast".

When it opens it requests the data right away (it takes a second or two, with your phone nearby).

How to read it

From top to bottom:

1. **The day and the spot:** "TODAY · SAT 10 OCT" and the spot's name.
2. **Daylight:** the arc at the top runs from sunrise to sunset and fills up to the current time, with a little sun at the current time. Below its two ends, the sunrise and sunset times. Everything goes by the spot's time, like the forecast's hours: with the watch in another time zone (travelling, or looking at a faraway spot), the current time, the hours gone by and the sun are the spot's.
3. **The waves:** one bar per hour, from 5 to 19 h. Taller = bigger waves. Above the bars, the height wherever it changes. On the left, the unit and the period for the day ("10s", or "9-12s" if it changes).
    - **The bar's colour** is that hour's traffic light at your beach, like the bezel of Today: green if the swell comes in head-on and the wind is offshore, yellow if one of them is fair (diagonal or cross-shore), red if one doesn't work (blocked or onshore). If another swell comes in better at the beach, the traffic light goes by that one.
    - **The little arrows** above the bars (every two hours) point **where the waves are heading**, in the swell's own colour: green head-on, yellow diagonal, red from the side or from behind. Above it, a smaller **hollow** arrow is the other swell, when it matters; on those days the bars sit a little lower, so both arrows and the height fit.
    - Hours that have already passed look dimmer, and a white line with a little triangle marks the current hour.
4. **The best-hours band:** a box behind the three most favorable hours with daylight. See The best hours.
5. **The wind**, every two hours: an arrow showing where it blows toward, in green (offshore), yellow (cross-shore) or red (onshore), and the speed under it, in the colour of **how hard it blows**: green under 20 km/h, yellow up to 30 and red at 30 or more. The arrow says whether the wind works for your beach; the number, whether it is a lot: a 32 km/h offshore wind has a green arrow and a red number.
6. **The tide:** the day's curve with the time of each high tide (turquoise dot) and low tide (sand dot), and a white dot at the current time.
7. **Water and air:** the current sea temperature (drop) and air temperature (thermometer); for tomorrow and the day after, the temperature at 8. The drop takes the colour of the water, as on the watch face: blue when cold (under 13°), teal (13 to 17°), green (17 to 21°), yellow (21 to 25°) and orange (25° or more).
8. **The dots at the bottom:** which day you're on (today, tomorrow, the day after).
9. **The sea's energy**, on the lower bezel: one arc per hour, from 5 h on the left to 19 h on the right, wider and in its colour the more energy the waves bring (see The sea's energy). The bolt, on the right, says what it is.
10. **A trophy**, by the DOWN button: DOWN opens the Today page (in Spanish the word HOY fits there instead).

The sea's energy

Height alone fools you: 1 m of 4 s chop looks bigger on the bars than 0.7 m of 9 s swell, and breaks with far less power. The energy puts height and period in one number: the waves' energy per metre of crest, **1.96 × height² × period²**, in kJ, with the height and the period the page shows (Total or Swell, as set in Settings → Waves). 0.6 m and 7 s is 35 kJ; 1 m and 8 s, 126; 1.6 m and 12 s, 723. It's the energy of the same sea that counts in the best hours: the other swell's if that one comes in better at your beach, and the page's waves without the wind chop that goes away.

What reaches your beach: waves that come in angled or blocked bring less, as in the best hours, and the energy drops more than the height does (it goes with the height squared): head-on they count in full, angled (at 55°) a little over half, side-on (at 100°) or with land in the way an eighth, from behind the beach nothing, and gradually in between. So a south swell at a beach that faces east no longer reads HIGH: at La Aguada on Sunday 8 November 2026, 1.5 m and 9 s from the south were 328 kJ out at sea and 38 reached it (MINIMAL). If the way the beach faces, or where the waves come from, is unknown, all of it counts.

The levels go on your zone's scale (see Your zone's scale): where the sea is bigger, each level takes more energy. The table is the world's, which is Rocha's; in Peniche each number goes times 3, in Italy divided by 6.

Level	kJ	Colour	Bars
FLAT	under 25	grey	none
MINIMAL	25 to 60	blue	1
LOW	60 to 150	green	2
MEDIUM	150 to 300	yellow	3
HIGH	300 to 600	orange	4
STRONG	600 to 1200	red	5
BIG	from 1200	violet	6

On the Today page and on Session's Start it shows as a meter of six bars with the word. The formula is surf-forecast's for one swell (0.5 m and 8 s are 31 kJ here and 30 there), but surf-forecast shows its biggest swell's on top and here it's the sea that counts at your beach, with what reaches it: the numbers don't always match, and other sites' (Surfline) don't either, because each works it out its own way.

The best hours

The box marks the three consecutive hours, with daylight, that look best: between sunrise and sunset, or the whole day under the midnight sun (Lofoten, from late May to mid-July). For each hour, the watch looks at:

- **The size** (counts most): nothing at 30 cm, best from 1.8 m, on your zone's scale.
- **The period:** nothing at 5 s, best from 13 s, also on your zone's scale. It counts by the size: in full from 45 cm, half at 30 cm and nothing at 15 cm or less, because the period makes a wave that's there bigger, it doesn't make one out of nothing (10 cm of leftover swell at 15 s no longer gets two stars).
- **The wind:** it doesn't bother you up to a certain point, which depends on where it blows from: up to 35 km/h if offshore, 12 km/h if cross-shore and 8 km/h if onshore, changing little by little with the angle in between. Stronger than that, the hour is worth less and less.
- **Whether the waves reach the beach:** head-on ones count in full, diagonal ones a bit less, blocked ones much less and the ones coming from behind the beach (from the land's side) nothing, also little by little with the angle: two beaches facing a few degrees apart don't tie, and neither jumps suddenly past the other. At the reefs and points the swell wraps into (the Bukit faces northwest and works with the south-southwest swell; also G-Land, Raglan, Rincón, Taghazout, Malibu…) what counts is their **swell window**, where the swell that works them comes from, not the way the coast faces; the wind still goes by the coast. So does the swell's colour on the arrows, Hoy's bezel and Session.
- **Each spot's shelter:** the watch knows on which sides each spot has land nearby (worked out from the OpenStreetMap coastline). Wind that crosses land less than 2 km away raises almost no chop (El Emir in a southwest wind, behind the peninsula), and swell with a headland or an island in the way arrives cut.
- **The other swell:** if there is an other swell, each hour is worth what the one that comes in better at the beach is worth, the page's waves or that one.

- **The wind chop that goes away:** if the wind blows from somewhere else than the waves and from the land, the chop it raises doesn't count; with an onshore wind the chop comes into the beach and counts (see The wind chop that goes away).

The tide isn't in it: the best hours, the morning alert, Today and the complications don't look at the tide. Check on the curve whether the best hours fall on the tide your spot likes: at a reef that doesn't break at low tide, the box can land right there. Session's stars do take your sessions' tide into account.

If the day has nothing worthwhile, the box doesn't appear. This calculation is the same for everyone; the stars based on your own sessions are in Session, on its conditions page (UP on Home). Forecast and Session are two Garmin apps, and on the watch one app can't read another's data (only watch faces read what another app publishes), so Forecast doesn't have your history. On the Apple Watch, where they're the same app, they're in Forecast too.

Your zone's scale

What counts as big depends on where you surf: 2 m is a huge day in Uruguay and an ordinary one in Nazaré. With one scale for the whole world, in Peniche, Cape Town, Chile or Peru almost every day got full marks for size and period, and in the Mediterranean or the Gulf of Mexico hardly any got to be good. So each zone has its own, taken from a year of waves there (November 2024 to October 2025, in daylight): **the best** is 88 % of the height exceeded 10 % of the hours, and 1.7 s more than the period exceeded 10 % of the hours. The bottom end (30 cm and 5 s on the world's) goes in the same proportion.

Zone	Best from
Rocha (the world's)	1.8 m and 13 s
Maldonado	1.6 m and 13.1 s
Oahu's North Shore	1.8 m and 16.9 s
Peniche	2.6 m and 15.4 s
Italy	1 m and 9.5 s

That changes the stars, the best-hours band, the morning alert and the levels of the sea's energy. Over a year, the green days went like this: La Boca from 31 % to 41 %, Supertubos (Peniche) from 35 % to 15 %, Forte dei Marmi (Italy) from 8 % to 31 %; Rocha, the same (La Aguada 15 %, La Pedrera 39 %). A zone downloaded before this, without its scale, uses the world's until the watch downloads it again.

The other swell

The sea often comes from two sides at once: in Uruguay, an east sea and a south swell; in Hawaii, the north swell and the trade-wind swell. A beach blocked from one may get the other. The wave model (GFS Wave) splits the sea into the wind chop and up to three swells, biggest first, and the watch looks at the two biggest: **the other swell** is the bigger of those two that comes from another side (30° or more away from the waves the page shows) and is at least 30 cm (on your zone's scale: 43 cm in Peniche, 17 in Italy).

It is drawn **only when it matters**: when it is the one that comes in better at your beach (and then it decides the colour and the best hours) or when it brings at least half the energy of the page's waves. That way it shows in few hours: over a month in 29 zones, in 4 % (drawn whenever there is another swell, in 30 %).

- **On the page:** a smaller, hollow arrow above the swell's (every two hours), in its colour: green if it comes in head-on at your beach, yellow diagonal, red blocked.
- **On Today:** a short arrow in from the edge of the rose, with its height and period next to it ("0.6 m 10 s").
- **In the score:** each hour is worth what the one that comes in better at the beach is worth, the page's waves or the other swell, and the bar's colour, Today's bezel, the best-hours band and the morning alert go by that one. For example, on 23 October at Cabo Polonio (facing south) the east sea came in from the side, red all day; the 10 s southeast swell came in diagonally, and the day turns yellow.

The order of the model's swells changes during the day (the first one becomes the second when another grows), so the hollow arrow can jump sides from one hour to the next. A third swell hardly ever changes anything: over a month in 26 zones around the world, adding it changed the best spot on a single day. In the zones with the ECMWF WAM model (California, Hawaii except Oahu's

North Shore, the US Northeast, southwest Ireland) there is no separate swell and it doesn't appear.

The wind chop that goes away

In the total sea, the wave model puts the swell and the chop the wind raises together, and gives it the direction and the period of the bigger of the two. The chop goes where the wind blows: with an offshore wind it heads out to sea and never reaches your beach, but it was adding to the height. So when the total sea is a swell's (it comes from its side and has its period) and the wind blows from 30° or more away from it and from the land, the score and the energy count the sea without that chop: what is left once the two swells are taken out (heights add up squared). The bars and the heights still show the total sea, as Settings → Waves asks.

With an onshore wind, though, the chop comes into your beach and counts in full: on 7 October 2026 at 7 h at La Aguada there was 1 m, almost all of it chop from the east, with a northeast wind, and the energy reads LOW (before, without the chop, FLAT). And if the total sea's period isn't any swell's, the total sea is the chop itself and it counts too: on 25 October at 17 h, a 6 cm swell from the same side took 1.7 m of sea away from La Aguada, and it read FLAT; now, MEDIUM.

For example, at La Aguada (faces east) on Thursday 5 November 2026 there was a 0.7 to 0.8 m, 7 s swell from the east and an offshore wind from the southwest of up to 29 km/h:

- **At 12 h** the total sea was 1.14 m from the east, 0.88 m of it chop from the southwest. The score counts 0.73 m, and the best hours move from 10-12 h, when it blew hardest, to 06-08 h.
- **At 13 h** the chop had grown bigger than the swell and the total sea turned to come from the southwest, from behind the beach: the energy read FLAT with the swell from the east still coming in. Now it goes with the swell, the other swell of those hours: MINIMAL.

It comes from what the app already asks for (the total sea, the two swells and the wind): not one request or byte of memory more on the watch. It applies to the page, Today, the morning alert, the complications and Session, on Garmin, the Apple Watch and the iPhone. In the zones with ECMWF WAM (no separate swell) and with Settings → Waves on Swell nothing changes. Garmin's Olas y viento data field doesn't download the swells (they don't fit in the fēnix 6's memory) and keeps the energy of the whole sea.

Changing the day

Swipe left to see tomorrow and the day after, and right to go back. After 19 h it opens straight on tomorrow.

On watches without a touchscreen (Forerunner 255, Instinct 3 AMOLED, Instinct Crossover AMOLED) only the first day is shown.

Choosing the spot

UP or a tap on the screen open the spot picker (**DOWN** opens the Today page).

- It opens on the **zone** you're in (for example "Maldonado" or "North Shore de Oahu"), with **Automatic** always at the top (it says which one is the nearest, or "nearest to where you are" if you're far from the spots; if it's the one in use, it says "active") and the spots from nearest to farthest. Each one shows its distance and a little arrow pointing to where it is (with north up).
- **BACK** shows the folders:
  - **The zone in use**, with how many spots it has.
  - **Saved zones**: the ones the watch has (the factory ones, which are Uruguay's, and the downloaded ones). Inside a downloaded one, the last row, **Remove this zone**, deletes it (it asks for confirmation), even the one in use: the picker goes back to Automatic and the zone downloads itself again when you're there.
  - **The whole world**: continent → country → region. Each region says how many spots it has and whether it's already saved or how much it weighs to download (2 or 3 KB). Choosing it downloads it and opens it.
- When you arrive somewhere new, the app downloads that zone on its own.
- When you pick a spot, its forecast is downloaded and **the Surf Dawn face switches to that same spot** (if it doesn't have that zone, it downloads it). Automatic goes back to picking the nearest one.
- Each app keeps its own zones (up to 10 besides the factory ones): when there's no room, the one you haven't used for the longest goes, and the ones you downloaded by hand go last.

Break type. The icon on each spot tells you how it breaks:

Icon	Type
The wave over a line of sand	Beach break (sand bottom)
The wave over three round stones	Point break (breaks against a point)
The wave over a row of teeth	Reef (rock or reef bottom)
A pin	Unknown

If you disagree with a spot's type, the last row of the picker, **Break type**, changes it: pick the spot and then Beach break, Point break, Reef or Unknown. It's marked "edited", and **As shipped** puts it back to the original. The change stays in Forecast only: Session and the face have their own.

The morning alert



Every day when you wake up (that's how it comes out of the box) or at the time you choose, the watch vibrates with **the best spot to surf today** among the ones near you: "Today: EL EMIR", and below it the waves and period in the day's best window ("1.4 m 6 s · 07-09 h") and the next two spots ("Next: …"). If other spots are about as good, it says "As good: LA PLAGE, ZORBA" (and "+3" if there are more).

- **How it picks:** it compares the nearest spots of your zone (up to 12, within 25 km of where you were the last time you closed the app; if the watch didn't know where you were, of the spot in use). For each one it finds its best three daylight hours, with the same scoring as The best hours, and the best window wins. If two are worth exactly the same (it happens with two beaches facing almost the same way that read the same model cell, like La Boca and La Martínez), the one the swell hits more head-on at the middle hour of the window wins, then the one with the more offshore wind and, if they are still even, the one that comes first in the zone's list: so the day's best spot is the same wherever you look from. Less than 15 % apart counts as about as good: the models miss the wind by about 5 km/h and 15°, and that alone moves the score that much. With the same swell, what usually decides is which way each beach faces and how the wind hits it.
- **Fresh data:** at the alert's time the watch asks for the forecast right then (the models' latest run), with the phone nearby or over Wi-Fi or LTE.
- **Without a connection, last night's:** at 21:00 the watch gets the next day's ranking (the phone is still there, before a sleep mode with battery saver turns it off). If there is no connection at the alert's time, it alerts with that one, marked "last night", and keeps trying every 15 minutes for four hours, and also as soon as the sleep mode schedule ends. When it gets the new forecast, it alerts again if the best spot, the window or the day's colour changed; if it's the same, it doesn't.
- **The icon's star** tells how the day looks: **green** if it's good (3 stars or more), **yellow** if it's fair.
- **A weak day doesn't alert:** if no spot has a window worth it (the forecast shows no band), the watch doesn't vibrate or show the notification, but the glance and the Today page still show the best there is, in red.
- **Open the alert** (**Open**) to see the Today page.
- **It stays on the glance:** the watch doesn't keep app notifications in the notification center, so the best spot stays in view all day on Forecast's glance (scrolling down from the watch face): the spot and its window in a pill the colour of the day; a bar with the hours from 05 to 19 in the colours of the Today page's bezel, the window's three taller and a mark at the time now; and below, the waves, the wind (with an arrow where it blows) and "last night" while it is still the evening's. After 19:00, once it has tomorrow's, it shows tomorrow's. Selecting it opens the Today page.
- It alerts once a day (twice if it alerted with last night's and the new one changed). If the watch is in sleep mode or Do Not Disturb at that time, it may not vibrate (it depends on how you have it set up); it stays on the glance anyway.
- **If it didn't come,** Settings → **Last try** says when it last tried and how it went: "notified", "weak day" (it got the forecast and didn't alert because the day is no good), "-104 no phone" (it couldn't find the phone over Bluetooth), "no answer", "out of memory", "no spots" (open and close Forecast once) or another error code. If it shows an earlier day, it didn't even try at the alert time. Only the morning's last try is kept: the evening run, which downloads tomorrow's ranking, doesn't change it.

- **Turning it on or off:** on the watch, Settings (hold **UP**) → **Morning alert**, and the time in **Alert time** (06:00 to 09:00, every 15 minutes, or **At wake time**; each START moves to the next one). Also from the Connect IQ app on the phone, in Surf Dawn Forecast's settings; if you turn it on there, open Forecast once on the watch so it gets scheduled. It comes on, at wake time: it gets scheduled the first time you close Forecast.
- **At wake time:** the alert comes when the watch's sleep schedule ends, each day's own: if you wake up later on Saturdays, that day it alerts later. Watches with Connect IQ 6 (like the fēnix 9) know the time for each day of the week; the others use the wake time in your profile, the same every day, and if the watch knows none, it alerts at 06:00. Settings says when the next one comes ("at wake time · 06:45"). The sleep schedule is changed on the watch or in Garmin Connect.
- **Why not a few minutes earlier:** until then the watch is in sleep mode, in Do Not Disturb and, with battery saver, without the phone, and app notifications are not kept: an alert before you wake up could go by without you seeing it. At that time it asks for the forecast, which takes a few seconds; if the phone isn't back yet, it alerts with last night's and carries on as always.
- **When updating from the store,** Garmin Connect may ask you to accept Forecast's new permissions: background (to fetch the forecast at that time with the app closed), notifications and user profile (to know when you wake up).

The Today page

It opens with **DOWN** from the forecast, when you open the alert, or from Settings → **Best spot today**. After 19:00 at the spot it shows tomorrow. If your zone is in another time zone than the watch (on a trip, say), "now", today and tomorrow go by the spot's clock, like the window's hours.

- **Which spot:** from the alert, the glance or Settings, the day's best ("BEST SPOT"); from the forecast, the spot you were looking at, with its place among the ones compared ("5 OF 12 SPOTS"). If that spot wasn't compared, the best.
- **The bezel is the day, from 05 to 20,** one segment per hour, a traffic light of the swell and the wind at that beach at that hour, in the colours of their arrows: green if the swell comes in head-on and the wind is offshore, yellow if one of them is fair (diagonal or cross-shore), red if one doesn't work (blocked or onshore); the worse of the two wins. If another swell comes in better at the beach, that is the swell of the traffic light. The best window comes from the score, which also weighs the size, the period and how strong the wind is, so it can fall on yellow hours (a cross-shore but light wind, for example). A green halo marks the best window and the white dot, the time now.
- **The hour you're looking at** has a white rim on its bezel segment and, next to it, **NOW** (the current one) or the hour ("15 h"). It opens on the current one; **DOWN** goes to the next and **UP** to the one before, and on touchscreen watches a tap on the bezel jumps to that hour.
- **Inside, for that hour:** the spot and its stars (the forecast's; the ones from your history are in Session); the **spot's rose**: your beach seen from above with the sea up, the sand at the bottom and you on the shore, with the swell (thick arrow) and the wind (thin arrow with feathers) coming in from where they come from, in the usual colours, and the other swell, if it matters, as a short arrow in from the edge, with its height and period next to it; below, on the left, **the waves** from the average wave to the sets ("0.4–0.6 m": the forecast's height is the average of the highest third, so most waves are smaller) with the period above; on the right, **the wind** with where it blows from above, in the colour of how hard it blows (as on the page: green under 20 km/h, yellow up to 30, red at 30 or more); and under both, centred and big, the energy.
- **A weak day** says "WEAK DAY" in red, with empty red stars.
- **At the bottom, the other spots:** the second and the third, or, if the spot isn't the best, the best and the next one ("1 LA BOCA · 6 ZORBA").
- **Spots nearby:** with **UP held** or a tap on the line of the other spots, the spots compared from best to worst, each with its window (or "weak"), a bar showing how good it is and its stars (red if it's weak).
- **START** (or picking one in Spots nearby) opens that spot's forecast, without changing the spot you picked or the face's. **BACK** goes back to the forecast.
- If the alert already downloaded the day's data less than three hours ago, it shows it without asking; otherwise it asks for it (without a connection, START retries).

On other watch faces

Surf Dawn Forecast publishes three complications for the spot you use. They show on Face It (the watch faces you build from a photo in the Connect IQ app on the phone), on Connect IQ watch faces that take other apps' complications and in the preview of glance folders. Garmin's own watch faces don't show other apps' complications.

Complication	What it shows	For example
Best hours (star)	the day's best three daylight hours and their stars, the same as the band and the alert; once they're over, the best of what's left, or "weak" when it doesn't work; at night, tomorrow's	06-08 4/5
Waves now (the wave)	from the mean wave to the sets, as on Today	1.1-1.7 m
Wind now (wind)	the wind's class at the beach (offshore, cross-shore or onshore) and its speed, rounded to 5 km/h or 2 knots, without the unit	offshore 10

- **To add them:** in Face It, when you build the face, pick "Surf Dawn Best hours", "Surf Dawn Waves now" or "Surf Dawn Wind now". On a Connect IQ watch face, from its settings; there the best hours may show up as "Surf Dawn Pronóstico". The colour comes from the face.
- **They update on their own:** every time you open Surf Dawn Forecast and, without opening it, once a day in the early morning, when the watch asks for the spot's forecast through the phone. Without the phone they keep the last one they got, for up to two days; then they show "–". The hours are the spot's. A forecast borrowed from a nearby spot doesn't reach them: they keep your spot's latest.
- **Holding** a complication, on faces that allow it, opens Surf Dawn Forecast.
- **To turn them off:** Settings → Complications, or Surf Dawn Forecast's settings in the Connect IQ app on the phone. Off, they're left empty and the watch asks for nothing for them.

Buttons

Button	What it does
UP or a tap	Spot picker
DOWN or a swipe up	Today page
Swipe sideways	Change day
START	Request the data again
UP held (MENU)	Settings
BACK	Exit (returns to the face)

Forecast settings

Setting	Values (factory default in bold)
Spot	opens the picker
Best spot today	opens the Today page
Morning alert	**Yes** or No (The morning alert)
Alert time	06:00 to 09:00, every 15 minutes, or **At wake time**
Last try	how the alert went last time (shows up after the first try)
Complications	**Yes** or No (On other watch faces)
Waves	**Total** (the whole sea) or Swell (only the groundswell)
Height	**Metres** or Feet
Wind	**km/h** or Knots
Background	**Sea**, Night, Graphite or Forest (each START moves to the next one)

Setting	Values (factory default in bold)
Language	**Match the watch**, Español, English or Português: the app's, the alert's, the glance's and the complications' (Languages)
Rate this app	opens Surf Dawn Forecast's page in the Connect IQ store on your phone, to leave a review ("no phone" if it is not connected)
Try Session	opens Surf Dawn Session's page in the Connect IQ store on your phone, to install it: it records your waves ("no phone" if it is not connected)
Version	the installed version, the same as in the store (with "dev" at the end, loaded by cable)

You have to set them here too: Garmin doesn't let one app read another's settings. The factory defaults are the same in all three. The alert, its time and the complications can also be changed from the Connect IQ app on the phone.

No connection

If it can't download the data, it shows the latest data it downloaded for this spot: at the top, in place of the date, it says since when, in orange, **"AS OF 07:10"** if it's from today, **"YESTERDAY 07:10"** or **"AS OF SAT 07:10"** if it's older. Forecasts cover three days, so yesterday's still has today and tomorrow, and one from the day before yesterday only has today (the dots at the bottom show how many days are left). As soon as the connection returns they update on their own when you open the app, or with **START**. If a retry fails, it goes back to showing the saved ones.

If there's no data for this spot that reaches today (the latest is three or more days old, or is from another spot), it shows "NO CONNECTION" in red. Check that your phone is nearby with Garmin Connect open and press **START** to retry. If it says "TRY LATER", Open-Meteo, where the forecasts come from, got too many requests from your network (its limit is per connection): it comes back by itself in a while.

Besides the spot in use, each app keeps the last forecast of the **two spots you used before**: when you go back to one it shows up right away (with since when, as above) while the new one downloads, also without a connection. They're the first thing deleted if the watch needs room.

If the spot in use has none kept but another one within 15 km does, it shows that one (the waves and the wind come from the same area of the model), with its name before since when: **"LA BOYA · AS OF 07:10"**.

Each app keeps its own forecast: what Forecast downloaded isn't seen by Session, and the other way around (Garmin doesn't let one app read another's data). To have it at the beach without your phone, open the app you're going to use before you leave. Session also downloads the one of the spot it uses by itself every 3 hours, even if you don't open it (Session).

Where each number comes from and why those models: Data and models.

Surf Dawn Session

Session records your surf session and saves it to Garmin Connect as a **Surfing** activity. It counts your waves on its own, tells you which way to go in the water and, when you get out, shows you a summary. With the stars you give each session, it learns which conditions you like at each spot.



To open it: press and hold the water temperature on the Surf Dawn face, or find it in the watch's app list ("Surf Dawn Session"). It opens on the **Home** screen.

Before you go in: the Home screen

Home shows you how the sea is right now at your spot, and whether the watch is ready to record.



Where	What it is	What it's for
In the middle	The time, the spot and the **GPS**: a red ring that blinks while it looks for a signal, a green check when it's ready to record	Wait for the green before pressing START
Left subdial	**The waves:** from the average wave to the sets ("0.4–0.6 m": the forecast's height is the average of the highest third, most waves are smaller), what their direction means on this beach (**head-on** green, **angled** yellow, **blocked** red) and the sea's energy that reaches your beach, in seven levels. Its rim is the **spot's rose**: the spot seen from above with the sea at the top (as on the map of the waves), the sand at the bottom with you on the shore (the white dot) and the arrow from where the waves come	Know whether there are waves, how much power they have, and whether they reach your beach well
Right subdial	**The wind:** speed and whether it's **offshore** (green, blowing from the land), **cross-shore** (yellow) or **onshore** (red), with the same rose on the rim and the arrow from where it blows. At a spot with no facing, the rose keeps north at the top and instead of the words it says where they come from (SE, S…)	Know whether the sea is clean or choppy

Where	What it is	What it's for
Top subdial	**The tide:** the height now and the next high or low ("falling 15:35"). Its rim is a tide clock: high at the top (teal), low at the bottom (sand), falling down the right and rising up the left, with a white dot at the moment of the cycle	Pick when to go in
Bottom subdial	**The water:** degrees (from the forecast) and its temperature on the rim, the drop in the water's colour (as in Forecast: blue when cold, teal, green, yellow and orange), and the recommended wetsuit: the thickness and below it the icons for boots, gloves and hood when needed	Know what to wear
Top left, along the edge	**The board** you're taking: its icon, the model and the length ("Firewire Mashup · 5'8"); a long model is cut with a dot. With **None** it doesn't show. Tap it to change it: it opens the boards list	See which board you go in with before pressing START

Start is how the sea is now: the whole day (the day's tide, the best hours, the sunset) is in the conditions, with **UP**.

No connection: if it can't download the forecast, it shows the last one it downloaded for this spot (in this app: open it before you head out), with the waves and wind **in grey**, even if it's from yesterday or the day before (it covers three days). The conditions (UP) say since when: "AS OF 07:10", "YESTERDAY 07:10" or "AS OF SAT 07:10". Without a forecast for the spot that reaches today, waves and wind stay as "–" and the conditions say "NO CONNECTION" ("TRY LATER" if Open-Meteo got too many requests from your network). The session records either way. Session downloads the forecast of the spot you use by itself every 3 hours, even if you don't open it, so it's enough for your phone to have been nearby at some point. If the spot the GPS picked has none kept, it shows the one of the nearest spot kept within 15 km, also in grey, and the conditions say whose it is ("LA BOYA · AS OF 07:10").

Buttons on Home

Button	What it does
START	Starts the session
UP	Shows or hides the day's conditions (the same page as Forecast, with your stars over the best hours). There, swiping sideways changes the day, and START closes them or, if they say "NO CONNECTION", downloads the forecast again
DOWN	Opens the menu: the routines, apnea (the test and the CO2 and O2 tables) and Settings
Hold UP (MENU)	Settings
BACK	Closes the app (or closes the conditions, if they're open)

The spot. Session picks the nearest spot on its own. With the first good GPS fix it switches to the one nearest to where you really are, and once in the water (the first time you paddle with GPS) it picks it again from there: starting in the car park or walking down the beach doesn't leave the session with the spot next door. Before your first wave, the beach's direction and the take-off zone also become the new spot's. If you picked one by hand (Settings → Spot), it keeps it as long as you're within 5 km of it. The picker is the same as in Forecast, with the wave over sand, rocks or reef according to the break type. Each app keeps its own spot: choosing one here doesn't change it on the face or in Forecast.

The recommended wetsuit

At the bottom you'll see the wetsuit for today's water: the thickness as text and, when needed, icons for **boots**, **gloves** and **hood**. For the thickness and the hood, the watch doesn't just look at the water: sitting on your board you're half out of it, wet and in the wind. If the air, with the wind, feels colder than the water, it counts the water a third of the difference colder, at most 3 degrees.

How the air feels with the wind is the weather services' wind chill (the Environment Canada and NWS formula): 10 °C with 30 km/h feels like 6.6 °C, and from 20 °C up the wind barely changes it. Air warmer than the water doesn't make the wetsuit lighter.

Water (already adjusted for wind and air)	Wetsuit	Hood
24 °C or more	rash guard	
21 to 24 °C	shorty	
17 to 21 °C	3/2	
13 to 17 °C	4/3	
10 to 13 °C	5/4	✓
less than 10 °C	6/5	✓

Boots and gloves go by the water alone, since your feet and hands are almost always in the water, where the wind doesn't reach: **boots** with the water under 15 °C and **gloves** under 13 °C. For example, with the water at 18 °C and 36 km/h of wind: with 22 °C air it's a 3/2; with 15 °C air (it feels like 12.8 °C), a 4/3.

It's a guide: each wetsuit brand shifts the cut-offs by a degree or two.

Routines: Pre-surf, Post-surf and CO2 table

DOWN on Home opens the menu: **Pre-surf**, **Post-surf**, **Apnea** and **Settings** (the same as UP held). **Apnea** opens the apnea test, the **CO2 table** and the O2 table, each with its own line under it (your best, how long you hold and how long it takes); BACK there goes back to the menu. UP and DOWN choose, START starts and BACK goes back to Home. They're meant for home: Pre-surf before you go, Post-surf when you're back. Each one is saved in Garmin Connect as an activity: Pre-surf and Post-surf as **Flexibility training** and the tables as **Breathwork**, with a lap per exercise, the time and the heart rate. If you leave with BACK before the first minute it isn't saved; after that, what you did is. A phone notification over the screen doesn't cut it: it stays one activity. Routines don't use GPS: it turns off when one starts and looks for a signal again back on Home, so the activity doesn't keep where you did it.



Routine	How long	What's in it
Pre-surf	5 min	Cat Camel ×6 in 40 s, Bird Dog ×6, Lunge with twist ×3 per side, Arm circles 0:30, Heel raises ×15, Stance squat ×8, Pop-up ×5
Post-surf	10 min	Cat Camel ×6 in 30 s, Doorway chest, Kneeling lat stretch, Open book, Hip flexor, Standing quad, Figure-4 glute, Hamstrings with band and Wall calf stretch (1 min each, 45 s the lats), Neck ×10 in 30 s and 4-6 breathing 1:00
CO2 table	14 min	2 min of easy nasal breathing, 6 holds of 30 s with 1:30 of breathing between them, and 1 min of 4-6 breathing
O2 table	21 min	The same with 6 holds growing from 45 % to 80 % of your best and 2:00 of breathing between them (with a best of 2:06)

Everything looks after your back: no loaded bending, a neutral spine, and the movement comes from the hips and the upper back. The lower back isn't stretched (no knees to the chest): after paddling it moves with the Cat Camel, gently and in a comfortable range.

Each exercise is one screen: a figure doing the movement, back and forth (orange is what moves; in the arm circles it goes round, and halfway it turns the other way), the name, the reps or the time, and a cue at the bottom. The bezel has a segment per exercise: teal the ones done and orange the current one, filling with its time. The stance squat and the pop-up are drawn in your stance (Settings → **Stance**): for a goofy the nose of the board is on the right and for a regular, on the left; in both, the back arm is on the far side of the body, a little lower.

- **With reps** ("6 times", "3 per side"): when you're done, START goes to the next one.
- **With time** ("1:00"): it waits with "START starts", so you can get in position. With START the countdown runs ("0:18 / 1:00"), it moves on by itself with a vibration at the end, and START skips it. In the ones done per side, halfway it vibrates twice, says "side 2" and stops: once you're on the other side, START goes on with the other half, so changing sides doesn't eat your time. Arm circles don't stop: halfway they say "now backwards" and go on.
- **At a pace** (the Cat Camel of both routines and Post-surf's neck): they also wait for START and then move on by themselves. The figure sets the pace, once per back and forth, and the number says which one you're on ("4 / 10").
- **4-6 breathing:** still until START, so it doesn't look as if it had started; then, a ring with the 10 s cycle, 4 to breathe in in teal and 6 to breathe out in lilac, and a dot going round it; the part you're on lights up and the other dims. In the middle, the teal nose while breathing in and the lilac wind while breathing out (the wind crossed out is holding, in the tables). At the bottom it says "breathe in through the nose" or "breathe out slowly", in the same colour, and the watch vibrates at each change: one long vibration to breathe in, two short ones to breathe out.
- **The screen:** it turns on at each change (exercise, side, breathing in or out) and every 10 seconds. AMOLED watches don't let an app keep it on for more than a minute in a row, so it may still go dark for a moment. With the watch's **Touch Lock** on (in its display settings), each time it goes dark the touchscreen locks: swipe down to unlock it. The buttons always work, in the apnea test too.
- BACK goes back to Home at any time.

At the end **Done** shows the exercises and the time ("IN GARMIN CONNECT": it's already saved), and after 4 seconds it goes back to Home by itself.



CO2 table: it trains bearing the CO2, what you feel in a long hold-down. The crossed-out wind is **Hold**, with an orange ring filling with the seconds; between holds, the nose is **Breathe**. At the end it asks "How did it go?": **Easy** makes the next one 5 s longer to hold (up to 1 min, or half your apnea test best if that's longer) and then 10 s shorter to rest (down to 1 min); **Hard** gives the rest back first and then shortens the hold (not under 20 s); **Just right** keeps it the same. Each option says what the next one will be.

> **Always on dry land**, seated or lying down, never in the water or driving. Before a hold, a normal breath in: hyperventilating is what causes blackouts. Stop at the first strong urge to breathe.

Apnea test

The test measures the longest breath hold you can do, **on dry land**: your best, how your heart rate drops while you hold and how long the calm part lasts, before the first contraction. With the result, the CO2 table fits you.

Opening it: DOWN on Home, **Apnea** (your best is under it) and **Apnea test**, with START. The first time you get the **On dry land** warning: sitting or lying down, never in the water, no hyperventilating first and better with someone near; START accepts it and begins. From the second test on you get the **history** instead: your best, how many tests you did, the last easy part and the curve of the last 8. START begins, BACK goes back to Home.



Step	How long	What you do
Get ready	1:50	4-6 breathing, the same as at the end of Post-surf
Breathe in and hold	10 s	The countdown in the ring: one normal breath in, no hyperventilating
Hold	as long as you can	The watch buzzes at the start and counts. START ends it

While you hold: the time at the top, and the bezel fills once a minute. In the middle, your heart rate's curve: it usually drops when you hold (the diving reflex), and below it says by how much. When you feel the **first contraction** (the diaphragm pushing to breathe), press **DOWN**: the strip at the bottom turns from teal to orange, and the hold is split into the **easy part** and the **struggle**. When you pass your best it buzzes three times. The screen turns on again every 10 s (AMOLED watches don't keep it on more than a minute in a row). BACK leaves without saving the test.

The result: the time and how it went against your best ("best · +14 s"), the bar of the easy part and the struggle, your heart rate at the start and the lowest, and **SpO2** at the start and the end if the watch measures it (on the wrist it's slow: in a hold of 1 or 2 minutes it hardly changes). If you marked the contraction, it says how much the easy part grew or dropped since the last test that had it; if not, it reminds you to mark it next time. A hold under 10 s (START by mistake) isn't saved.

The CO2 table from the test: with START, if half the test changes the CO2 table's hold by 5 s or more, it asks "Set it to your 2:06?": **Yes** sets it to half (1:03) and **No** leaves it as it is. After that, Easy and Hard keep adjusting it, and with a best the top for Easy is half your best instead of 1 min.

The test is saved in Garmin Connect as **Breathwork** ("Apnea test"), with the heart rate, a lap per step and another from the contraction. The history keeps the last 20 tests, also the ones you did on the iPhone or the Apple Watch if you use the iPhone app.

> **Always on dry land**, seated or lying down, never in the water or driving: a long hold can end in a blackout with no warning, and in the water that kills. Before a hold, a normal breath in: hyperventilating gives you no more air and makes a blackout more likely.

O2 table

The O2 table trains bearing little oxygen: the closest thing to staying under a set. The CO2 table has short holds and rests that shrink; the O2 table, the other way round: the rest stays the same and the holds grow up to near your longest. They come from your best in the apnea test.

Opening it: DOWN on Home, **Apnea** and **O2 table** (under it, how far it goes and how long it takes: "up to 1:41 · 21 min"), with START. Without any test it says "the test first", and START opens the test with its warning.



Step	How long (best 2:06)	What you do
Easy nasal	2:00	Breathe through your nose, calmly
Hold ×6	0:57, 1:06, 1:14, 1:23, 1:32 and 1:41	From 45 % to 80 % of your best, a longer one each round
Breathe ×5	2:00	Between holds, through your nose, without loading up on air
4-6 breathing	1:00	To finish

The screens are the CO2 table's: "O2 · ROUND 5/6" at the top, the bezel with a segment per round and, under each hold, which part of your best it is ("73 % of your best"). It runs by itself: each step moves on with a vibration and START skips it.

At the end, "How did it go?": **Easy** raises the top 5 % (up to 85 % of your best), **Hard** lowers it 5 % (down to 70 %) and **Just right** keeps it; each option says how far the next one goes ("next: up to 1:47"). Since it comes from your best, a new best in the test raises the table by itself.

It's saved in Garmin Connect as **Breathwork** ("O2 table"), with the heart rate and a lap per step.

> **Always on dry land**, seated or lying down, never in the water or driving. The O2 table is harder than the CO2 one: long holds one after another, with less oxygen each time. Between them breathe calmly, without hyperventilating, and if a hold doesn't come, START cuts it.

Starting

1. Wait for the satellite to turn **green**.
2. Press **START**. The watch vibrates and moves to the Session page.

If there's no GPS yet, START shows the "No GPS" notice. If you still want to start, press **START again**: it records without a position until the GPS shows up.

Tips: - On the watch, set **Display → During activity → Always on**, so you can see it without touching anything. - On a beach that isn't in any zone, press START at the shoreline: with the first metres you paddle, the watch learns which way the beach lies. At spots inside the zones it already knows. - The first minute of the session never counts as a wave.

In the water: the four pages

DOWN goes to the next page and UP to the previous one: **Session → Take-off → Forecast → Waves** and back to Session. If you stay on Forecast or Waves, after 30 seconds it returns to Session on its own. Take-off doesn't return on its own: it stays while you follow the arrow.



Session page

- **Very top, between the two bezels:** the GPS right now, with the satellite in **green** (there's a position), **yellow** (weak position) or **red** (no position coming through, for example with your wrist under the water). Next to it, the battery: the icon filled to its level (green, yellow or red) and the percentage.
- **Top:** the time and, in pink, the session time (pauses don't count). While paused, the time turns yellow.
- **Middle, large:** the waves you've caught so far and, below, how many were lefts (◄ **orange**) and rights (**teal** ►), in the Waves page's colours.

- **Below, your time so far:** the time riding in minutes and seconds (the wave, teal: **2'14"**, since a session rides only a few minutes), the minutes paddling (the swimmer, blue) and waiting (the clock, orange), in the right bezel's order. What you're doing now sits in a pill; waiting, with how long you've been waiting, for example "52' 3:12": 52 minutes waited in the session, and waiting for the last 3 minutes and 12 seconds.
- **The card below:** the **last wave** (how many seconds it lasted, the top speed, the metres and which way it went) and, on top, how long ago it ended ("LAST · 3 min ago").
- **In Calibrate mode** (Settings → Mode), the top of the card shows your marks instead of how long ago: green ✓ **good** (you marked it and the watch counted it), sand ○ **missed** (you marked it and the watch didn't see it), red ✗ **extra** (the watch counted one you didn't mark). See Marking waves.
- **Bottom, the water and the paddling:** the temperature the watch measures (it shows up 8 minutes into the session: in the water the watch's case takes about a minute to reach the water's temperature, and the value comes from what it measured since, minute by minute, leaning to the lowest: what keeps the watch off the water is heat, from the arm out of it or the sun) and, next to the swimmer, how far you have paddled: in metres up to 1 km and then in kilometres, or in yards and miles if the waves are in feet (Settings → Height). See How waves are counted.
- **Left bezel:** your heart rate. The zone you're in lights up (grey, blue, green, orange, red) and next to it go the heart and the beats per minute. With no pulse, or below zone 1, all five stay off.
- **Right bezel:** your time split, as in the summary. Riding at the top (teal), then paddling (blue, the water) and waiting at the bottom (orange, the sand), each stretch as long as its share. What you're doing lights up; the other two stay dimmed. While paused, all three are dimmed.
- **What you're doing** doesn't change every second: the watch looks at the last 20. It switches to paddling once you've paddled 12 of them and back to waiting at 8 or fewer. Riding shows as soon as you catch the wave, and duck diving counts as waiting.

Take-off page: the compass

It takes you back to the place where your waves break.

- **The ring** is a compass that turns with the watch (the N is in red). At the top it says which way the watch is pointing, for example "138° SE". On watches without a compass (which ones) the ring turns with the direction you're moving; when you're still, after 10 seconds it settles with north at the top and the top just says "N".
- **Two markers on the edge**, each one where its place is: the **orange wave** is the **take-off zone** (the place where you caught today's waves) and the **white pin** is the **entry** (where you started the session). Each marker has a notch that points outward.
- **In the middle**, with the same orange wave: how many metres you are from the take-off and how many waves started there. **At the bottom**, with the same pin: the metres to the entry.
- **The zone is where you caught the most waves.** The watch looks for the wave that, adding the ones that started within 30 m of it, gathers the most seconds ridden, and the zone is the middle of that group, the longer ones weighing more. If you caught two waves far from each other, the zone is where the longer one started, not the sea between them; a stray wave far from the rest doesn't move it, unless it lasted longer than the whole group together.
- **Before your first wave**, if you've already surfed that spot, the wave marks the zone from an earlier session (in sand colour): the last one at the same tide (rising or falling), and the bottom says "from your sessions at this tide"; if you've never gone at this tide, the one from your last session there, and it says "from your last session here". If you've never surfed that spot, it says "shows up with the first wave".
- If a marker ends up right behind you, it shifts a little along the edge so it doesn't cover the page dots. Distances are always in metres. The current and the swell period you felt on the board no longer show up: the wrist's GPS and accelerometer can't measure them (Current and drift).

Forecast page

The conditions: the spot's forecast for the day, as in Forecast, with **your stars** over the three best hours. You can't change day while recording. If it couldn't be downloaded, it shows the last one downloaded with since when at the top ("AS OF 07:10", "YESTERDAY 07:10"), or says "NO CONNECTION" if there's none for the spot that reaches today: while recording, START opens the menu, so to retry, end the session and press START on the conditions in Home.

Waves page

- **The timeline** of the session: one bar per wave, taller the longer it lasted. **Orange** = left, **turquoise** = right, **white** = straight. The **star** marks the best wave of the day, and a green dot, the ones you marked.

- **How many** went left, straight and right.
- **The last three waves:** time, seconds, top speed, metres and which way. The best one is highlighted.
- **Attempts:** the waves you paddled for and didn't catch.

The **best wave** is the one that adds up the most between how long it lasted and how fast it was.

Buttons in the water

Button	What it does
START	Opens the menu without pausing the session
BACK once	Nothing. That way your wetsuit cuff doesn't kick you out of the app or mark waves by accident
BACK twice in a row	Marks a wave (in Calibrate mode). The watch vibrates twice
UP / DOWN	Previous / next page
Hold UP (MENU)	Settings (the ones you can change in the water)
Hold LIGHT	The watch's controls menu (light, inReach messages, SOS). The session keeps recording
Touchscreen	Does nothing with the session open (recording, paused and on the summary, also in the START menu, Rate and Tags), unless you turn on "Touch in session" in Settings. Settings and the Discard confirmation are watch screens and respond to touch

Vibrations: one at the start, a short one every time the watch counts a wave (when it ends, not when you stand up), two short ones when you mark, a long one with each alert and two when saving.

The START menu



START opens the menu without pausing. UP and DOWN choose, START confirms and BACK closes it. If you don't touch anything, it closes on its own after 20 seconds ("closes in 15 s").

Option	What it does
Continue	Goes back to the session (if it was paused, resumes it)
Mark wave	Same as BACK twice (only if marking is on)
Pause / Resume	Pauses the time and the detection, or turns them back on. If you pause right after a wave the watch was still finishing counting, it counts it when you pause, with its vibration
Waves	The list of all your waves, newest to oldest: seconds, top speed, metres, which way, **strokes** to catch it and **manoeuvres**; the selected wave (UP and DOWN) also shows whether it was **frontside** or **backside**. The best one has a star
Save	Ends the session and shows the summary
Discard	Deletes the session (asks for confirmation)

Option	What it does
Mode	Switches from Calibrate to Automatic and back

To finish: START, UP three times to **Save**, and START.

How waves are counted

The watch uses the GPS, accelerometer and gyroscope in your wrist:

- **A wave** starts when you head toward the beach at more than 7 km/h for a couple of seconds. It counts if it lasts at least 3 seconds, reaches 10 km/h in at least two seconds (a single fast GPS reading is not enough) and covers at least 10 metres. Between one wave and the next, 15 seconds have to pass. These numbers are those of the **Wall** detection, the factory default; in Settings you can choose another.
- **An attempt** is a strong paddle toward a wave that doesn't end up as a wave. They're counted separately.
- **Caught** = waves out of waves plus attempts. If you paddled for 9 and caught 6, it's 6/9 (66 %).
- **Left or right** is seen from the board, facing the beach: if the wave took you toward your right it's a right. If you went straight to the shore, it's "straight".
- **Frontside or backside** comes from the direction and your stance (Settings → **Stance**, Goofy by default): facing the wave (frontside) are the lefts for a goofy and the rights for a regular; the others are backside. A "straight" wave is neither.
- **Manoeuvres** (an estimate): within a wave, each sharp turn of the wrist (measured by the gyroscope) or each change of direction of more than 60° that the GPS sees between two positions 2 seconds apart or less counts as a manoeuvre, at most one every 3 seconds. The wrist turns just as hard while paddling, so the number follows how long the wave lasted more than what you did on it: that's why it doesn't count for the best wave. If you turn off the gyroscope in Settings, only changes of direction count, and with the wrist's GPS they hardly ever get there.
- **Strokes:** the watch picks up the rhythm of your paddling on your wrist, so it counts those of the arm wearing the watch: each stroke is a full turn of that arm, as Garmin counts swimming strokes (paddling with both arms, you make twice as many). For each wave it counts the strokes in the 15 seconds before (how much you paddled to catch it). It also adds up those of the whole session.
- **Metres paddled:** the time you paddled times your paddling speed. While you paddle, your wrist goes into the water on every stroke and the GPS gets a position only now and then, so the watch does not add up the track point by point: it measures your speed over the stretches where it sees you paddle between two positions and multiplies it by the time spent paddling. The speed is yours with that board: it starts from your previous sessions with it (1 m/s with a new board) and adjusts to what it measures during the session. It is an estimate: good for comparing sessions, not for measuring a distance.
- **Pop-up:** the time it takes you to stand up. It isn't shown yet: see The pop-up.
- **A wave without GPS:** with your wrist in the water, the GPS can go a minute or two without a position (on the fēnix 9 Pro, Session gets one in 1 or 2 of every 10 seconds), and a whole wave can fall between two positions. Then the watch counts it with the accelerometer: a few seconds of hard knocks at the wrist (5 g or more, as when riding) and, at the next position, at least 20 metres closer to the beach than at the one before, leaving out what you paddled between them (and the two positions less than two and a half minutes apart). The knocks alone aren't enough, because duck diving or hard paddling give them too; getting closer to the beach alone isn't either, because you may have paddled. The wave counts when the next position comes, up to two and a half minutes later, and only then does the watch vibrate. It has no speed or distance: the screens show "–", and for the best wave only its duration counts. If you paddle back out before a position comes, the watch doesn't see it: in 7 hours recorded in Calibrate it found half the waves the GPS missed.

Strokes and manoeuvres aren't shown while you surf: they're in the wave list in the menu and in Garmin Connect, and the strokes also in the rating.

The pop-up

It's the time it takes you to stand up. **It isn't shown yet**, neither on the watch nor in Garmin Connect: the first version looked on the wrist for a pause of the hands on the board before the push, and on real waves that pause doesn't show up, because the forearm turns while you push and the board pitches as it drops down the wave. On the 24 waves of four sessions recorded in Calibrate it didn't find a single pop-up.

The watch keeps working it out and saves it in each wave's lap (without showing it in Connect), and in Calibrate mode each session saves the raw accelerometer and gyroscope: with filmed take-offs the rule can be redone and shown again (how it works).

For reference, what the studies say (all on land; there are no published numbers in the water, nor for beginners):

Who	From → to	Time
Competitive surfers	the chest lifts off → the front foot lands	0.56 s (men), 0.68 s (women)
Experienced recreational surfers	hands touch the board → become stable (what the watch measures)	1.2 s
Intermediates around 25 years old	same	1.1 s
Intermediates around 50 years old	same	2.0 s

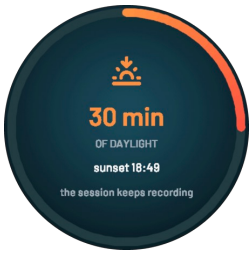
Current and drift

The **current** no longer shows on Take-off. To measure it, the watch would have to see how much you move while waiting without paddling, and with the GPS on the wrist that isn't enough: while you wait the wrist is in the water and the GPS gives a position in 1 or 2 seconds out of 10, each position is off by about 5 metres, and what the watch sees as waiting includes the odd stroke to settle yourself. In four sessions recorded in Calibrate there wasn't a single 5-minute stretch sitting still with enough positions to tell a current from the GPS's error (and what carries you while sitting is the current plus the wind). The watch keeps working it out with those rules and, if it ever measures it, leaves it in the session's FIT without showing it, so it can be checked.

The **swell period** that came from the bobbing of the board isn't shown either: on the wrist the arm moves the watch far more than the swell does, and the two can't be told apart.

What does stay is the **drift** alert, which doesn't need to measure the current: if while you wait you end up **20 metres** away from your take-off zone (or the distance you choose, 10 to 200 m), it warns you with a long vibration, and when you are back, with two short ones (see Alerts). It only warns after you have waited within that distance: before your first wave the zone is the one of your earlier sessions at the spot, and walking to the water, or waiting at another peak of the same beach, you weren't there.

Alerts



Each alert vibrates long and shows a banner that says "the session keeps recording". It closes on its own after 8 seconds, or sooner with BACK or START. They're turned on and off in **Settings → Alerts**.

Alert	When	Default
Sunset	30 minutes before sunset; under the midnight sun, or when the sun sets after midnight, it doesn't alert	on
Tide	When high or low tide arrives (at the time it falls)	on

Alert	When	Default
Drift	If, while waiting, you drift farther than the distance below from the take-off zone (10 seconds in a row, so a GPS jump doesn't set it off), after having waited within it: walking to the water doesn't set it off; when you are back within that distance, two short buzzes and "back at the spot", and it can alert again	on
Distance	How many metres away the drift alert goes off: 10, 20, 30, 50, 75, 100, 150 or 200 (START moves to the next)	20 m
Every 30 min	Every half hour of session, with the waves you have so far	off

The sunset and the tide come from the forecast, which the watch downloads when you open the app with your phone nearby, in the spot's time.

Marking waves: Calibrate and Automatic mode

Automatic is the default: the watch counts the waves on its own. To see how well it counts them with your waves, choose **Calibrate** (Settings → Mode, or in the START menu): when each real wave ends, press **BACK twice**. The watch compares your marks with what it counted and shows you good / missed / extra. It also saves a second-by-second log, with the raw accelerometer and gyroscope (25 readings per second), to improve detection and to learn to measure the pop-up with your waves. That log makes the activity bigger (about 0.6 MB more per hour), so it takes a little longer to transfer to Garmin Connect.

When the counts add up for you, go back to **Automatic**: no marks, no log and a cleaner screen. If you still want to mark in Automatic, turn on "Mark with BACK"; those marks stay only in Garmin Connect.

A mark counts for a wave if you make it from a little before you stand up until 60 seconds after it ends, as long as you haven't caught another one. Easiest: mark as soon as the wave ends, or when you paddle back out.

Ending the session

With START → Save → START you get to the summary, the rating and the tags.



Summary (two pages, UP and DOWN switch between them): - The time **in the water** and how it was split: riding (turquoise, in minutes and seconds: **2'14"**), paddling (blue) and waiting (orange), these two as a percentage, in the Session page's bezel colours. - **Waves** (in Calibrate, also how many you marked; in Automatic, how many frontside and backside according to your stance, as **FS 2 · BS 3**; the lefts and rights are on the Waves page), **top speed**, **the best** (the one with the star on the Waves page: seconds and metres) and **caught** (waves out of attempts). - On the second page: paddling (kilometres and strokes), the water the watch measured, average and max heart rate, and what the swell, wind and tide were like at the start. If the watch didn't get to measure the water (a session under 8 minutes, or a watch without a thermometer), it shows the forecast's at the start and says **Forecast** instead of **Water**. That is the water that gets saved (in the history, in Garmin Connect and on the iPhone), whatever you choose in Water temperature. - START saves and goes on to Rate. BACK goes back to the menu with the session paused: Resume keeps recording. At the bottom it says: "▲▼ more · START saves / BACK back to the menu".

Rate ("How was it?"): starts at 3 stars. UP adds one, DOWN takes one away (from BAD to EPIC). The bezel shows an automatic score from 0 to 10 (the waves per hour, how long they lasted, how many you caught of the ones you tried and the longest; with few waves they weigh less, so a single wave, however long, doesn't make a 10 session, and in a session under half an hour the waves per hour are counted over the half hour) and at the bottom go two figures from your session, for example "6 strokes on average to catch" or "100 % of attempts caught". START goes on to the tags. BACK saves without stars. At the bottom it says: "▲▼ stars · START next / BACK saves unrated".

Tags: Size, Wind, Crowd, Current, Section and Tide. They help you remember what was special about that session. UP and DOWN move between the tags (the one with the white border), START turns one on or off (when on it turns **green**) and BACK saves. At the bottom it says: "▲▼ choose · START marks / BACK saves".

When saving, "Saved · IN GARMIN CONNECT" appears, the watch vibrates twice and goes back to Home, ready for another session. If you turn off "Rate when saving", START on the summary saves straight away.

If the watch closes the app while you're recording, the session is saved anyway, without stars.

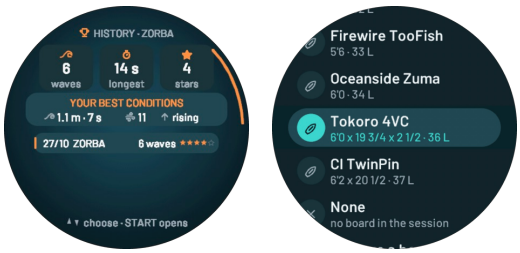
Stars

Every time you give stars to a session, the watch saves what the conditions were like at the start: waves, period, where the swell was coming from, wind, tide and time (if it didn't know the tide, the tide doesn't count). Then, for any hour of the forecast, it looks for your sessions **at that same spot** with similar conditions and shows you the average of the stars you gave them. The most similar ones weigh more.

- With few similar sessions (fewer than 3), it blends your stars with an estimate from the forecast (size, period, wind and beach orientation). With none, you see only the estimate.
- "1 session", "4 sessions" next to the stars says how many similar sessions it's based on.
- Stars appear on **Home** (for right now), on the **Forecast** page (over the best hours of the day) and in the **Best window** complication (see below). Not in the Forecast app: forecast and Session are two Garmin apps, and on the watch one app can't read another's data (only watch faces read what another app publishes), so Forecast doesn't have your history.
- In Settings → Stars you choose "History + estimate" (default), "History only" or "No". With "No" they don't appear anywhere; with "History only", only when you've rated similar sessions at that spot.

The more sessions you rate, the better it knows you.

History and records



Settings → History shows: - The **records of the spot** you're at: most waves in a session, the longest wave and your best rating. - **Your best conditions** at that spot: what the waves, wind and tide were like in the session you gave the most stars to. - **Your sessions**, newest to oldest (from all spots): date, spot, waves and stars. UP and DOWN choose one and **START** opens it.

A session shows the day and time, the spot, your stars, the waves, the longest one, the board, the water (**FORECAST** instead of **WATER** if the watch didn't measure it, as in the summary), what the sea was like when you went in (the swell and whether it came in straight, the wind and whether it was offshore, in Home's colours, and the tide and whether it was rising or falling, if it was known) and the tags you gave it. UP and DOWN go to the previous or next session; BACK returns to the list.

Its waves: for the last 10 sessions, **START** shows each wave as Waves does during the session (time, seconds, top speed, metres, right or left, strokes, manoeuvres and frontside or backside; the best in orange with its star). On a wave, **START** shows it on the **map**: where each wave began and ended, from the take-off zone (the orange ring) and where you went in (the pin), with

the beach at the bottom, rights in teal and lefts in orange; UP and DOWN move between waves. Older sessions show the summary, and their waves stay in Garmin Connect. Waves are kept from this version on: sessions recorded before don't have them.

To see another spot's records, change the spot first (Settings → Spot). The watch keeps up to 60 sessions per spot and 200 in total; when it hits the limit the oldest ones are deleted. If the watch's memory fills up, the first thing to go is the waves of the oldest session that has them.

Boards

The board you're carrying appears on Home, top left along the edge (the model and the length), and is saved in each session (also in Garmin Connect, in the **Board** field).

- **Choosing it:** Settings → Board, or by tapping the board on Home (on touchscreen watches; anywhere else on Home, a tap is START). Each one shows its length, litres and how many sessions it has. It stays selected for the next sessions. The board is fixed when you press START: you can't change it in the water.
- **Adding your own:** on the phone, Connect IQ app → Surf Dawn Session → Settings → Boards (up to 12, with model, length and litres), or in the iPhone app (Profile → Boards), which sends them to the watch and replaces the Connect IQ ones. The app doesn't come with boards: until you add them, sessions are recorded without a board. Until you pick one, the first on your list is used.
- **None:** records the session without a board.
- **Remove a board:** takes it off the watch's list (asks for confirmation). To get it back, add it again from the phone.

Settings

Hold **UP** (MENU) on Home or while recording, or choose **Settings** in the DOWN menu. START changes the value or opens the option, BACK closes.



Setting	Options (defaults in bold)	What it's for
Board	your boards, None, Remove a board	See Boards
Stance	**Goofy**, Regular	Which foot you surf with forward: with that each wave comes out as frontside or backside, and the Pre-surf squat and pop-up face your way
Watch on	**left**, right	Which wrist you wear the watch on. It's saved with each wave in Garmin Connect to tune the pop-up
Spot	the spot picker	Choose the spot by hand
Detection	**Wall**, Whitewater, Performance, Custom	**Whitewater** for small, slow waves or whitewater; **Wall**, the everyday one; **Performance** for big, fast waves (asks for more speed and distance). With the iPhone app your level picks it (Profile → Your surfing)

Setting	Options (defaults in bold)	What it's for
Custom	Take-off (**7** km/h), Minimum peak (**10** km/h), Minimum distance (**10** m), Minimum duration (**3** s), Between waves (**15** s), Towards the shore (**yes**)	Your own thresholds. Changing one switches detection to Custom. "Towards the shore: no" also counts waves that don't head toward the beach
Mode	**Automatic**, Calibrate	See Marking waves
Mark with BACK	yes, **no**	Mark waves in Automatic too
Vibrate on detection	**yes**, no	One vibration for each wave counted
Water temperature	**Sensor**, Forecast, Both	Which water to show in the water and on Home: the one the watch measures (from 8 minutes in), the forecast's, or the forecast until the sensor is ready. On watches without a thermometer, Sensor shows the forecast's. The session always saves the one the watch measured (Ending the session)
GPS	**Multi-band**, Max accuracy, SatIQ, GPS only	Multi-band is the most accurate; SatIQ uses less battery. Max accuracy is dynamic SatIQ in its most accurate mode (the fēnix 9 watches, the Enduro 4 and the MARQ Gen 3): it uses more battery than SatIQ. Only the ones your watch takes show up. On watches without multi-band, Multi-band uses all systems on one band
Gyroscope	**yes**, no	Counts manoeuvres with wrist turns; off, it uses less battery. On watches without a gyroscope nothing changes
1 Hz log	yes, **no**	Save the second-by-second log (with the raw accelerometer and gyroscope) in Automatic too
Lap per wave	**yes**, no	One lap per wave in Garmin Connect. Off, the activity is a single lap, with no wave data
Alerts	Sunset, Tide, Drift, Every 30 min	See Alerts
History		See History and records
Rate when saving	**yes**, no	Ask for stars and tags when saving
Stars	**History + estimate**, History only, No	See Stars
Waves	**Total**, Swell	Total = the whole sea (like the "Wave" row on Windguru); Swell = just the ground swell
Height	**Metres**, Feet	
Wind	**km/h**, Knots	Also the speed of the waves
Touch in session	yes, **no**	Use the touchscreen with the session open
Background	**Sea**, Night, Graphite, Forest	The background colour, as on the face
Language	**Match the watch**, Español, English, Português	Session's screens; the names of the data in Garmin Connect follow the watch's (Languages)

Setting	Options (defaults in bold)	What it's for
Rate this app	(opens the phone)	Session's page in the Connect IQ store on your phone, to leave a review ("no phone" if it is not connected). It doesn't appear while recording
Version	(read only)	The installed version; with "dev" at the end, loaded by cable

While recording, Board, Stance, Watch on, Spot, Detection, Custom, GPS, Gyroscope, 1 Hz log, Lap per wave, History and Language don't appear: you choose them before starting. These settings belong to Session only: Garmin doesn't let one app read another's, so units, background and language are chosen in each app.

What ends up in Garmin Connect

The session shows up as **Surfing**, with your route and your heart rate, and also:

- **One lap per wave** (if "Lap per wave" is on), with how long the wave lasted, the metres, the side, whether you marked it, the max and average speed, the strokes to catch it, the manoeuvres and whether it was frontside (1) or backside (-1). Off, you get a single lap with that data empty; the waves are still counted in the session data.
- **Session data:** waves, the longest, minutes riding and paddling, distance paddled, the water the watch measured, the conditions at the start (the forecast's swell, wind and tide; if the watch didn't measure the water, the forecast's too, marked: "water fcst 18C"), spot, stars and tags. The session's attempts, score, board and strokes stay in the watch's history and on the iPhone, not in Garmin Connect: that way the data fields you have on the native Surf fit (below). Each wave's pop-up stays in the FIT file without being shown (The pop-up).
- **In Calibrate mode**, two more charts: what you were doing (waiting, paddling, riding, duck dive) and the paddling, and the detection the watch used.

The native Surf's data fields count: Garmin allows up to 16 fields of an app's own per part of the activity (each second, each lap, the summary), adding up those of every app, and the Connect IQ fields on the screens of the watch's Surf count even when Session is the one recording. Session leaves room for Waves and wind and Water. If you add fields from other apps that also write data to the activity and Session closes when you press START, take them off the Surf's screens, or set up another Surf activity with them.

The routines are separate activities: Pre-surf and Post-surf as Flexibility training and the CO2 and O2 tables and the apnea test as Breathwork, with a lap per exercise.

Garmin Connect shows this data under its own names when the app is installed from the Connect IQ store. If you installed it by cable, it's still inside the activity file.

With the iPhone app

The Surf Dawn iPhone app receives your sessions. You connect it once, from the app: Profile → Watches → Connect a Garmin, which opens Garmin Connect to choose the watch.

- **Every session you save** reaches the phone with its waves, its map, the time surfing, paddling and waiting, the distance paddled and the strokes. No need to wait: if you leave Session right away (say, to start the watch's own Surf), the watch sends it by itself a few seconds later, without stalling whatever you're using. With Session open, it sends it when you leave the watch on Home for about 20 seconds without pressing a button, because the watch stalls for a moment while it sends; while you record, on the summary or with another screen open it sends nothing. If the phone isn't nearby or the iPhone app is closed, the session waits on the watch (up to 60), and once the iPhone app has received something from this watch, the watch tries again every 5 minutes for the first hour and then every half hour for a day (and at the end of each activity), so it arrives a while after you open the app. Otherwise it goes the next time you open Session: the iPhone app asks for it every time you open it and when you go to Sessions, and Session sends it with Home still (if it didn't get through, it tries again after 10 minutes, or sooner if the iPhone asks again). A session with very many waves (more than about 45, depending on how much you paddled) only goes with Session open.

- **What the forecast said:** each session keeps the stars the watch's forecast gave its hours and the day's best window, from the forecast it had at the start, with the waves it shows (Settings → Waves). The watch doesn't show it; on the iPhone it's in the session, under the sea when you went in, to compare with your stars (A session). Without a forecast at the start, it keeps nothing.
- **Your waves on the satellite:** with the take-off zone marked, each wave shows on the spot's satellite photo, with the sea at the top; you can replay the session wave by wave and open each one with its figures. Under them, **where you paddled**: the watch counts the seconds paddling in 10 m squares and the app paints them as a heat map, from yellow (a little) to red (where you paddled the most); the Paddling button turns it off and on. And the **photos of that day** in your camera roll, each with the wave its time falls in.
- **Profile:** your numbers (sessions per month, waves per hour, the time in the water), your records, your spots and which sea you surf best in, by your stars.
- **The history you already had** is asked for by the app when you connect the watch (and with Profile → Watches → Ask for the history): up to 60 sessions of the history arrive, and the waves of the last 10. They arrive with Session open and still on Home: the first ones after 20 seconds, then 4 sessions every 5 seconds or so (all 60 in a couple of minutes). If you leave before, the rest follows the next time you open Session and leave it on Home.
- **In iCloud:** with Sync with iCloud (Profile → Your data) your sessions, with their waves and where you paddled, show up on your other iPhones with the same Apple ID, and come back if you change iPhone or delete the app.
- **Stars and tags** can be changed on the phone. With your sessions, the app shows at each spot the stars you gave to similar conditions.
- **Your boards** are entered in the app (Profile → Boards) and go to the watch: they replace the ones in the Connect IQ app.
- **Your surfing** (Profile → Your surfing): your stance (goofy or regular) and the watch's wrist go to Session's Settings when they change on the phone: if you then pick another on the watch, that one stays until you change it on the phone. And your **level** picks the Detection: beginner, Whitewater; intermediate, Wall; advanced, Performance. The app suggests one from your waves (the top speed half of your last waves go over). It changes the Detection only when you change the level: if you then pick another on the watch, that one stays.
- **Train:** your apnea tests, where the CO2 and O2 tables are at and the routines you finish go to the phone, and from the phone comes what you did on the iPhone or the Apple Watch: your record and the tables are the same on all of them. If a table changed in two places, the last one you changed stays. It goes like the sessions: with the watch still on Home or when you leave Session, and if it doesn't get through, it waits on the watch like them.
- **A new watch:** when you connect it, the app gives it your history (the sessions the phone has, with your stars), your boards, Your surfing and Train, and your stars come back in the watch's forecast. It can also be done by hand: Profile → Watches → Send yours. What the watch already had stays as it was.

Without the iPhone app, Session works as always.

Your waves with the watch's own Surf

If you record with the watch's own **Surf** activity (Garmin's) instead of Session, the **Surf Dawn Waves and Wind** data field also counts your waves, with Session's same detector. On the fēnix 9 Pro it counts more today: with a Connect IQ app recording, the watch turns the GPS on and off and gets a position in 1 or 2 of every 10 seconds (a Garmin bug, already reported), and with its own Surf in 5 to 7. On 9 November 2026 at La Posta, Session counted 1 wave out of at least 3; half an hour later, with the watch's Surf, the field counted 4 (and Garmin's Surf, 0).

- **Adding it:** install Surf Dawn Waves and Wind from the Connect IQ store. On the watch, in Surf: **Activity Settings → Data Screens**, pick a screen and a field, and under **Connect IQ** pick **Surf Dawn Waves and Wind**.
- **What it shows:** the waves and wind right now at the spot, as always, and once the timer starts, **4 YOUR WAVES** in orange where the spot's name goes (on its own or in the top or bottom of two), or the number between the waves and the wind in the small slots. For 30 seconds after each wave the whole slot is that wave: **WAVE 4**, how long it lasted and its top speed (in the smallest slots, only how long it lasted); on the full screen, also the lefts, the rights and the longest.
- **How it counts:** with the GPS alone, with the rules of Session's **Pared** detection (see How waves are counted). A data field can't read the accelerometer, so there are no waves without GPS, attempts, strokes, manoeuvres or pop-up. The beach's direction is the spot's if you are within 3 km of it; if not, it learns it from the first metres you paddle out. A wave counts when it ends, a few seconds later.
- **Only in Surf:** in other activities (running, SUP, swimming) the field shows only the sea, because running towards the beach would count as a wave. It needs a watch with Connect IQ 3.2 or later: the older ones (fēnix 5X, D2 Charlie and Delta, Descent Mk1, Approach S62) don't tell the field which activity it is.

- **In Garmin Connect:** the activity carries your waves, the lefts, the rights and the longest in its data, and a chart with the waves through the session. They don't reach the iPhone app or Session's history yet.

Water temperature with the watch's own Surf

With the watch's own **Surf**, or any other activity in the water (SUP, open-water swimming, kite), the **Surf Dawn Water Temp** data field gives you the water temperature the watch's thermometer measures, worked out the same way as in Session.

- **Adding it:** install Surf Dawn Water Temp from the Connect IQ store. On the watch, in the activity: **Activity Settings → Data Screens**, pick a screen and a field, and under **Connect IQ** pick **Surf Dawn Water Temp**.
- **What it shows: WATER** and the temperature in large figures, with one decimal, in °C or °F as the watch's temperature units say. It is the same one Session keeps: on the wrist the thermometer reads body heat, and in the water the watch's case follows the water's with a minute's lag. That is why the number comes from what it measured each minute from the 8th minute of the timer on, leaning to the lowest (the arm out of the water or the sun warm it up), without going to the lowest of all (a one-minute dip does not move it).
- **Before the 8th minute: FORECAST** and the forecast's sea temperature at the nearest spot (or the one you pick in the field's **Spot** setting), in grey, as Session does until it has its own. Where there is room, a line below says how long to go: **sensor in 6 min**. After that, the forecast's goes there to compare: **forecast 18.2°**. On the full screen and in the top or bottom of two, the spot's name goes too.
- **Without a thermometer** (Forerunner 70): always the forecast's, and **no thermometer** below.
- **Without the phone:** the thermometer's comes anyway. The forecast's, if the field fetched it before (it asks every 3 hours); if not, the field says **NO PHONE** until the 8th minute.
- **Paused**, the timer doesn't run, and neither do the 8 minutes. If you change the data screens in the middle of the activity, the field starts over: its number comes back a minute later, with the minutes since then.
- **In Garmin Connect:** the activity carries the **Water** the watch measured in its data, like Session's sessions. If the watch didn't get to measure it (under 8 minutes, or a watch without a thermometer), it isn't there: the forecast's is not kept.

Session on other watch faces

Session publishes two complications that any compatible face can show: - **Surf Dawn Session**: your last session ("8 waves"). From the Surf Dawn face you open it by pressing and holding the water temperature. - **Surf Dawn Best window**: the two hours of the day with the most stars for you ("14-16 h · 4/5"). When you open Session from there, it starts on the day's conditions.

Both are calculated every time you save a session: the best window is the one for the day you saved the last one.

How waves are detected, in detail, and how it was tested: Session design.

Install, Garmin watches and FAQ

Install

- **From the Connect IQ Store:** the **Surf Dawn** face and **Surf Dawn Forecast** are free: search for them in the Connect IQ app on your phone, install them and they update themselves. You change their phone settings from there.
- **The data fields**, also free in the store, go inside the watch's own Surf or another activity in the water: Surf Dawn Tide, Surf Dawn Waves and Wind (your waves) and Surf Dawn Water Temp (the water temperature).
- **Session** is free in the store too: Surf Dawn Session. The face and Forecast work without it.
- **The Apple Watch and the iPhone:** a single app, Surf Dawn, for iPhone with iOS 17 or later, which brings the Apple Watch one with it (watchOS 10 or later), on the App Store (Install).

Supported watches

All three apps run on Garmin **round watches with 5 buttons** and Connect IQ 4.2 or later: 50 models.

Display	Watches
AMOLED	fēnix 9 Pro (43, 47 and 51 mm), fēnix 9 (43, 47 and 51 mm), fēnix 8 (43, 47 and 51 mm), fēnix 8 Pro (47 and 51 mm, also MicroLED), tactix 8, quatix 8 and 8 Pro, fēnix E, epix Pro (Gen 2) in 42, 47 and 51 mm, epix (Gen 2), quatix 7 Pro and Sapphire, tactix 7 AMOLED, MARQ (Gen 2) and MARQ Aviator, MARQ (Gen 3), D2 Mach 1, Mach 1 Pro, Mach 2 and Mach 2 Pro, Forerunner 965, 970, 570 (42 and 47 mm), 265, 170, 165 and 70 (and their Music versions), Descent Mk3 and Mk3i 43 mm, Descent Mk3i 51 mm, Descent G2, Instinct 3 AMOLED (45 and 50 mm) and Instinct Crossover AMOLED
MIP (transflective display)	fēnix 7, 7 Pro and 7 Pro Solar, fēnix 7X, 7X Pro and 7X Pro Solar, tactix 7, quatix 7 and 7X Solar, Enduro 2, 3 and 4, fēnix 8 Solar (47 and 51 mm), tactix 8 Solar, fēnix 9 Pro Solar (47 and 51 mm), Forerunner 955 (and Solar), 255 and 255 Music

Differences you will notice:

- **MIP:** flat colours and the face has no second hand. The display never turns off, so at rest you still see the full face.
- **Instinct Crossover AMOLED:** it has real hands, so the face doesn't draw its own and has no digital-time option.
- **No touchscreen** (Forerunner 255 and 255 Music, Instinct 3 AMOLED, Instinct Crossover AMOLED): the face gestures don't exist (open Forecast and Session from the app list) and Forecast shows a single day.

Watches with 2 or 3 buttons (Venu, vívoactive, Approach, D2 Air), monochrome-display Instincts, smaller displays (fēnix 7S, Forerunner 255s and 265s) and watches older than Connect IQ 4.2 (fēnix 6, first-generation MARQ, Forerunner 945) are not supported. Every model is listed on each app's page in the Connect IQ store.

What each watch measures

All of them have GPS, an accelerometer and a heart-rate sensor: that is enough to count waves, paddling and distance on any of them. The other sensors vary by model (Garmin spec sheets, October 2026).

- **Price** compares Garmin's list price when the model came out, not what it costs in any particular country: **$** up to US$350, **$$** up to US$650, **$$$** up to US$1,000, **$$$$** up to US$1,500 and **$$$$$** above that. The table runs from cheapest to most expensive; with sales or in another country the number changes, but it is good for comparing.
- **Session** is a star rating: how many of the five sensors Session makes use of the watch has (gyroscope, barometer, thermometer, compass and multi-band GPS). The touchscreen doesn't count, because in the water Session is operated with the buttons.

Watch	Price	Session	Gyroscope	Barometer	Thermometer	Compass	Multi-band GPS	Touch
Forerunner 255 and 255 Music	$	★★★★★	yes	yes	yes	yes	yes	**no**
Forerunner 170 and 170 Music	$	★★★★☆	yes	yes	yes	yes	**no**	yes
Forerunner 165 and 165 Music	$	★★★☆☆	**no**	yes	yes	yes	**no**	yes
Forerunner 70	$	☆☆☆☆☆	**no**	**no**	**no**	**no**	**no**	yes
Forerunner 265	$$	★★★★★	yes	yes	yes	yes	yes	yes
Forerunner 955 and 955 Solar	$$	★★★★★	yes	yes	yes	yes	yes	yes
Forerunner 570 (42 and 47 mm)	$$	★★★★★	yes	yes	yes	yes	yes	yes
Forerunner 965	$$	★★★★★	yes	yes	yes	yes	yes	yes
Instinct 3 AMOLED (45 and 50 mm)	$$	★★★★★	yes	yes	yes	yes	yes	**no**
Instinct Crossover AMOLED	$$	★★★★★	yes	yes	yes	yes	yes	**no**
Descent G2	$$	★★★★☆	yes	yes	yes	yes	**no**	yes
Forerunner 970	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 7 Pro and 7 Pro Solar	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 7X Pro and 7X Pro Solar	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 7 Sapphire Solar	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 7X Sapphire Solar	$$$	★★★★★	yes	yes	yes	yes	yes	yes
epix Pro (Gen 2) 42, 47 and 51 mm	$$$	★★★★★	yes	yes	yes	yes	yes	yes
epix (Gen 2) Sapphire	$$$	★★★★★	yes	yes	yes	yes	yes	yes
quatix 7 Sapphire	$$$	★★★★★	yes	yes	yes	yes	yes	yes
quatix 7X Solar	$$$	★★★★★	yes	yes	yes	yes	yes	yes
Enduro 3	$$$	★★★★★	yes	yes	yes	yes	yes	yes
Enduro 4	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 9 (43, 47 and 51 mm)	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 8 (43, 47 and 51 mm)	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 8 Solar (47 and 51 mm)	$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 7 and 7 Solar (without Sapphire), quatix 7	$$$	★★★★☆	yes	yes	yes	yes	**no**	yes
fēnix E	$$$	★★★★☆	yes	yes	yes	yes	**no**	yes
fēnix 7X Solar (without Sapphire)	$$$	★★★★☆	yes	yes	yes	yes	**no**	yes
epix (Gen 2) without Sapphire	$$$	★★★★☆	yes	yes	yes	yes	**no**	yes
fēnix 9 Pro (43, 47 and 51 mm)	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 9 Pro Solar (47 and 51 mm)	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
Descent Mk3 and Mk3i 43 mm	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
Enduro 2	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
tactix 7 and tactix 7 AMOLED	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
quatix 7 Pro	$$$$	★★★★★	yes	yes	yes	yes	yes	yes

Watch	Price	Session	Gyroscope	Barometer	Thermometer	Compass	Multi-band GPS	Touch
quatix 8	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 8 Pro (47 and 51 mm)	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
tactix 8 and tactix 8 Solar	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
D2 Mach 1 and Mach 1 Pro	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
quatix 8 Pro	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
D2 Mach 2	$$$$	★★★★★	yes	yes	yes	yes	yes	yes
D2 Mach 2 Pro	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes
Descent Mk3i 51 mm	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes
MARQ (Gen 2): Athlete, Adventurer, Captain, Golfer, Carbon, Commander Carbon	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes
fēnix 8 Pro MicroLED	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes
MARQ (Gen 2) Aviator	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes
MARQ (Gen 3): Athlete, Adventurer, Aviator, Commander, Golfer, Diver	$$$$$	★★★★★	yes	yes	yes	yes	yes	yes

Zero stars doesn't mean it doesn't work: the Forerunner 70 counts waves, paddling and distance like any other. The face and Forecast work the same on all of them, because they use the GPS and the phone's data, not these sensors.

What changes in Session when the watch lacks a sensor:

If it doesn't have	What you lose	What Session does instead
Gyroscope	Manoeuvres from wrist rotations	It counts manoeuvres only from GPS changes of direction, and the Gyroscope setting changes nothing
Barometer	Knowing when you duck under a wave: no "duck dive" appears and it can't use it to discard false waves	It counts waves just the same, with the GPS and the accelerometer
Thermometer	The water temperature measured at your wrist	Water temperature → Sensor shows the forecast's value 30 seconds after the start
Compass	The Take-off ring following where the watch points when you are still	While you move, the ring turns with your heading (GPS). Standing still, after 10 seconds it settles with north up and the top just says "N"
Multi-band GPS	Extra accuracy near cliffs, piers or buildings	GPS → Multi-band uses all systems on a single band
Touchscreen	The face's gestures and seeing more than one day in Forecast	Everything is operated with the buttons; Forecast and Session open from the app list

Languages

The apps are in **Spanish** if the watch is set to Spanish, in **Portuguese** if it is set to Portuguese, and in **English** if it is set to any other language. The same goes for the names of Session's data in Garmin Connect.

Forecast and Session can use another one: **Settings → Language**, Match the watch (out of the box), Español, English or Português. The app changes at once and, in Forecast, so do the morning alert, the glance and the complications. Each app has its own (Garmin doesn't let one app read another's settings). What stays in the watch's language: the apps' names and their complications', their settings in the Connect IQ app on the phone, the names of Session's data in Garmin Connect, and the face, Rings and the data fields.

On the Apple Watch and the iPhone it works the same way: Settings → **Language**, Match the watch (or Match the iPhone), Español, English or Português, each device its own (iPhone settings).

inReach messages

Watches with inReach (such as the fēnix 9 Pro) send and receive messages by satellite. No Connect IQ app can read or send them, but the watch's own access works on any screen, even while recording a session (the session keeps recording):

1. Hold **LIGHT**: the controls menu opens.
2. Choose **Messenger** to read and reply, or **Check-in** to send your "I'm OK" with your location. **SOS** is there too.

To have Messenger first: with the controls menu open, hold **MENU** → Reorder Controls, choose Messenger and move it up. If it doesn't appear, add it with Add Controls. From the face, the inReach glance is in the glance list (DOWN).

With the phone far away or out of signal, the watch uses the satellite. New messages also arrive as a notification during the session, if you have notifications during activities turned on.

If your watch offers Messenger to watch faces, touching and holding the top row of the Surf Dawn face (sunrise and sunset) opens it.

Frequently asked questions

The numbers are grey and it says "4 H AGO". No new data has arrived for more than 3 hours. The phone has no connection or Garmin Connect is closed. If there is also a crossed-out phone, the watch isn't connected to the phone.

It says "LOADING" or "—". It is a new spot and its data hasn't arrived yet. Nearby spots load instantly; a distant one takes a few minutes, because Garmin only allows an update once every 5 minutes.

Total or Swell? Total is the whole sea: the groundswell plus the waves the wind builds. It is what Windguru shows in the "Wave" row and it is the default. Swell is the groundswell only.

Does the tide include the wind? No. It is the astronomical tide from the official table of the nearest port. In Uruguay that tide is small: from low to high there are about 50 cm in Montevideo and 20 to 30 cm in Punta del Este and La Paloma, while the wind and the air pressure shift the level by 20 to 30 cm on an ordinary day and by more than 1 m in a storm. In a sudestada (a strong southeasterly storm surge) the water is higher than it says, with a northerly wind lower, and high tide can come an hour or two off. Far from any port it is a model's sea level (Open-Meteo), which adds the air pressure and is less accurate near the coast.

The face, Forecast and Session show different spots. The spot you choose in Forecast also carries over to the face. But Session picks its own with the GPS when it starts, and the fixed spot from Customize doesn't carry over to Forecast. Garmin doesn't let one app read what another one saved.

Why do I have to choose units and background in each app? For the same reason: each app stores its own settings. The defaults are the same in all three.

The watch missed a wave, or counted an extra one. Use Calibrate mode and mark your waves with BACK twice: you will see how many it got right. If the waves at your spot are small and slow, try the Whitewater detection; if they are big and fast, Performance (Session settings).

Does it measure the pop-up? It isn't shown yet. The first version looked for a pause of the hands that doesn't show up on real waves, and it found no pop-up on the 24 waves of four sessions. The watch keeps working it out without showing it, and in Calibrate mode each session saves the raw accelerometer and gyroscope data to redo it with filmed take-offs (The pop-up).

Does it measure the current? No: with the GPS on the wrist, waiting in the water, there aren't enough positions to tell it from the GPS's error (Current and drift). The drift alert does work: it looks at the distance to your take-off zone.

The water says "—" at the start of the session. The watch's sensor needs 8 minutes to stop feeling the heat of your wrist. If you want a number from the start, choose Water temperature → Both. Watches without a thermometer show the forecast's value after 30 seconds (which ones). What gets saved is always the one the watch measured; if it didn't get to measure it, the forecast's, and the summary, the history and the iPhone say **Forecast** instead of **Water**.

What happens if the app closes while I'm recording? The session is saved anyway, with no stars.

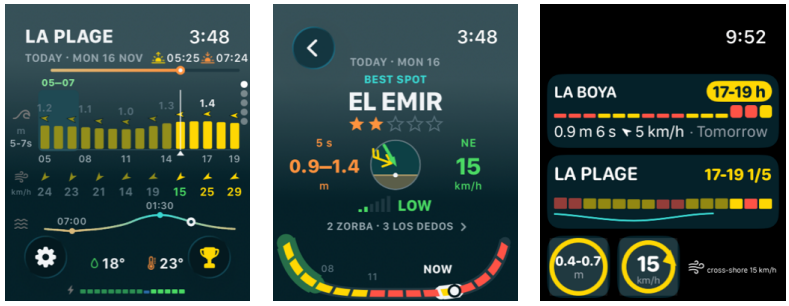
Does it show up in Garmin Connect? Yes: as Surfing, with one lap per wave. Session's own data (waves, strokes, board, stars) appears under its name if the app is installed from the store; otherwise it stays inside the activity file.

How do I use less battery? In Session, GPS SatIQ instead of Multi-band or Max accuracy and the gyroscope off (it won't count manoeuvres from your wrist). On the face, the Graphite background.

Is Garmin's own Surf activity still useful? Yes, and it is good for comparing. If you use it, set GPS to "All Systems + Multi-Band" and recording to "Every Second".

Surf Dawn on the Apple Watch

On the Apple Watch, Surf Dawn is a single app with **Forecast**, **Session** and **Train**, plus **the morning alert**, **the complications** and **the Smart Stack**. It uses the same spots, the same data and the same best-hours calculation as on Garmin, with the same wording. It comes inside the iPhone app, and on the watch it works on its own, without the iPhone nearby.



Getting started

1. **Install Surf Dawn on the iPhone** (see Install). The watch app installs with it.
2. **Open it on the watch** and let it use your location: with that it picks the nearest spot and downloads the spots of your zone. Also let it send you notifications, for the morning alert.
3. **Choose your units and your background** in Settings (the gear button, bottom left). They come set to metres, km/h and the Sea background.
4. **Tell it how you surf**, on the iPhone: Profile → Your surfing → your **level**. With that, Session picks how it detects your waves (Your surfing).
5. **Check the forecast:** the app opens on your spot's day, with the three best hours marked. The trophy, bottom right, opens Today: the best spot among the ones near you.
6. **Before you go in the water,** scroll down with the Digital Crown to **Session** and tap **Start**. In the water, the first page shows **GPS** in green once it has a signal.
7. **When you come out:** on the last page, **End**; **Rate**, the tags and **Save**. It's kept on the iPhone and in Health.

Install

- **A single app:** Surf Dawn is an iPhone app (on the App Store) that brings the Apple Watch one with it. If Automatic App Install is on in the iPhone's Watch app, the watch installs it by itself; if not, in the Watch app → Available Apps → Surf Dawn → **Install**.
- **It needs** watchOS 10 or later on the watch and iOS 17 or later on the iPhone.
- **It's free**, with no ads and no account. If you like, you can leave a tip from the iPhone (Support Surf Dawn).
- **Permissions** are asked for when they're needed: location and notifications when you open it, and Health and Motion & Fitness the first time you start a session (Health to save it as a Surfing workout, with the map and heart rate; Motion & Fitness for the barometer, which tells when you're under water). Health is also asked for by the first routine of Train, if you haven't given it yet.

Forecast

Garmin's forecast page in the Apple Watch's shape: your spot's day hour by hour, from 5 to 19 h, on a single screen. It reads the same as on Garmin (How to read it):

- **At the top,** the spot and the time; below, the day ("TOMORROW · WED 4") and the sunrise and sunset times. The bar under them is the daylight, on the same hours as the chart: it starts at the sunrise hour and ends at the sunset hour, and today it fills up to the sun, which sits right above the line of the current hour.
- **The waves** (the wave row): one bar per hour, taller the bigger they are, in that hour's colour at your beach: green if the swell comes in head-on and the wind is offshore, yellow if one of them is fair, red if one doesn't work. Above the bars, the height wherever it changes and the little arrows showing where the waves are heading; the smaller, hollow one is the other swell, when it matters. On the left, the unit and the period.

- **The best-hours band:** a box behind the three best hours with daylight, with their hours above it ("17–19"). It's the same calculation as on Garmin (The best hours); if the day has nothing worthwhile, it doesn't appear.
- **Your stars:** if you've rated sessions at that spot in similar conditions, the stars you gave them go under the band's hours, as on Session's conditions on Garmin (Stars). Without similar sessions they don't appear.
- **The wind** (the wind row), every two hours: an arrow showing where it blows toward, in green (offshore), yellow (cross-shore) or red (onshore), and the speed under it, in the colour of how hard it blows: green under 20 km/h, yellow up to 30 and red at 30 or more.
- **The tide** (the tide row): the day's curve, with the times of high and low tide.
- **At the bottom,** between the two buttons, the water and the air; along the bottom edge, the sea's energy hour by hour.
- Hours that have already passed look dimmer, and a line marks the current hour.

Gesture	What it does
Turn the Digital Crown or swipe up	Tomorrow and the day after; then, Session
Tap the spot (top)	The spot picker
Touch and hold the page	Request the data again
Gear (bottom left)	Settings
Trophy (bottom right)	Today

The spot picker is Garmin's (Choosing the spot): **Automatic** at the top (the nearest), your zone's spots from nearest to farthest with their distance, **Saved zones** (and **Remove this zone**), **The whole world** to download another region, and **Break type** to correct a spot's type (**As shipped** puts it back). The spot you pick also goes to the complications.

With no connection it shows the latest it downloaded for that spot, with since when in orange, as on Garmin (No connection). If it has nothing that reaches today, it says **NO CONNECTION · TAP TO RETRY**, or **TRY LATER** if Open-Meteo got too many requests from your network: the watch asks it nothing until its limit is back, in a while. If the spot has nothing kept, it shows the one of the nearest spot kept within 15 km, with its name before since when. The watch downloads the spot's forecast again by itself when it gets old, even if you don't use the complications.

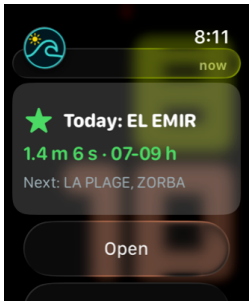
Today

It opens with the **trophy** (bottom right), from Settings → **Best spot today**, when you open the morning alert or when you tap the Smart Stack. It's Garmin's Today page, with the bezel turned into an arc across the bottom half of the screen.

- **Which spot:** from the alert, the Smart Stack or Settings, the day's best ("BEST SPOT"); from the trophy, the one you were looking at, with its place among the nearby spots. After 19 h at the spot, tomorrow. If your zone is in another time zone than the watch, "now", today and tomorrow go by the spot's clock.
- **The arc is the day,** from 05 h on the left to 20 h on the right, with midday at the bottom: one segment per hour in the colour of the swell and the wind at that beach, and the best window marked.
- **The hour you're looking at:** it opens on the current one (**NOW**). The Digital Crown moves from hour to hour, and a tap on the arc jumps to that hour.
- **Inside, for that hour:** the spot and its stars; the **spot's rose** (your beach seen from above, with the sea at the top: the swell as a thick arrow and the wind as a thin one, coming in from where they come from, in their colour); on the left the waves, from the average wave to the sets, with the period above; on the right the wind, with where it blows from, in the colour of how hard it blows (as in the wind row); and at the bottom the sea's energy.
- **A weak day** says **WEAK DAY** in red.
- **The other spots,** at the bottom ("2 LA BOCA · 3 LA MARTINEZ"): a tap opens **Spots nearby**, from best to worst, each with its window and its stars.
- **A tap in the middle** opens that spot's forecast, without changing the one you picked.

The morning alert

Every day, at the time you choose, the watch tells you **the best spot to surf today** among the ones near you: "Today: EL EMIR", the waves and the period in the day's best window ("1.4 m 6 s · 07-09 h") and the next two ("Next: …"), or the ones that are about as good ("As good: LA PLAGE, ZORBA"). It compares the same spots with the same calculation as on Garmin: the 12 nearest in your zone, within 25 km (how it picks).



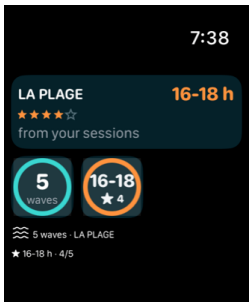
- **The time:** Settings → **Alert time**, from 06:00 to 09:00 every 15 minutes (06:00 out of the box). **Morning alert** turns it on or off; it comes on.
- **It arrives on time even without a connection:** at night, from 21:00, the app downloads tomorrow's ranking and leaves the alert scheduled with it ("last night"); if you already downloaded it after 19:00 (Today, or the best spot widget), it schedules it with that one, without asking again. Ten minutes before the time it tries to download it with the models' latest run and, if it arrives, replaces it. If the new one arrives after last night's has already alerted, it alerts again only if the best spot, the window or the day's colour changed. Without a connection it retries every 15 minutes for four hours.
- **A weak day doesn't alert.**
- **It stays in Notification Center** on the watch. **Open** opens Today with the best spot.
- **The star:** when you look at the alert with your wrist raised, a **green** star on a good day and a **yellow** one on a fair day, like the alert's icon on Garmin. At first glance watchOS shows the app's icon.
- **If it didn't come,** Settings → **Last try** says when it last tried and how it went, in Garmin's words: "notified", "weak day", "no spots" (open and close the app once, so it saves your zone's spots), "no connection" (on Garmin, "-104 no phone"), "no answer" (it asked and got no answer in time) or the server's error with its number ("503 error"). If it wasn't today, with the day first: "sat 06:00 · notified".
- **There's no "At wake time":** watchOS doesn't give apps the sleep schedule, so the alert goes at a fixed time. If the watch is in Sleep Focus or Do Not Disturb at that time, it may not vibrate; it still stays in Notification Center and in the Smart Stack.

Complications and Smart Stack

Apple doesn't let other apps make watch faces, so the Surf Dawn face isn't on the Apple Watch. Instead, Surf Dawn puts your spot on the Apple watch faces that take complications (Modular Ultra, Infograph, Wayfinder, Modular and others):

Complication	What it shows
Surf Dawn, rectangular	The spot and its best hours ("06-08 4/5"), over each hour's waves in their colour and the tide
Surf Dawn, circular	The waves now, from the average wave to the sets ("1.1-1.7 m"), in a ring the colour of the day
Surf Dawn, corner	The waves now and the next high or low tide
Surf Dawn, inline	The spot and its best hours
Surf Dawn Wind now, circular	The wind speed in a ring of its colour at the beach (green offshore, yellow cross-shore, red onshore), with a notch on the side it comes from
Surf Dawn Wind now, corner	The speed, and offshore, cross-shore or onshore along the edge
Surf Dawn Wind now, inline	"offshore 10 km/h"
Surf Dawn Session, circular, corner or inline	Your last session: how many waves ("5 waves · LA PLAGE"). Tapping it opens Home
Surf Dawn Best window, rectangular, circular, corner or inline	Today's two hours with the most stars for you at the spot in use, from your sessions ("16-18 h · 4/5"); without similar rated sessions, "–"

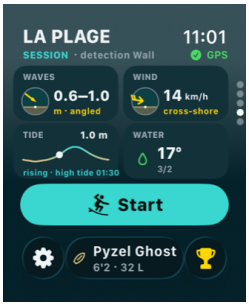
They're Forecast's three on Garmin (On other watch faces): the **best hours**, the **waves now** and the **wind now**, with the same wording; the wind is rounded to 5 km/h or 2 knots. Session's two are those of Session on other watch faces.

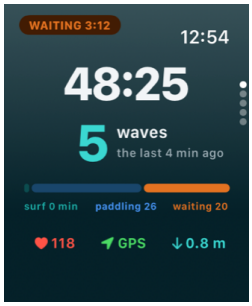


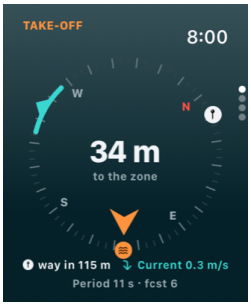
- **To add them:** touch and hold the watch face → **Edit** → Complications, tap a slot and choose **Surf Dawn**, **Surf Dawn Wind now**, **Surf Dawn Session** or **Surf Dawn Best window**.
- **The Smart Stack** (turn the Digital Crown from the watch face) has **Best spot today**, which on Garmin is Forecast's glance: the day's best spot with its window in a pill the colour of the day, the bar of hours in green, yellow and red, the waves and the wind. From the alert time until the window ends, watchOS moves it to the top by itself. If it doesn't appear, touch and hold the Smart Stack and add it with **+**. Tapping it opens Today.
- **They update on their own:** the watch requests the spot's day again when its data gets old. Tapping a complication opens the app.
- **To turn them off:** Settings → **Complications**. Off, they stay empty and the watch requests nothing for them; the Smart Stack stays the same.

Session

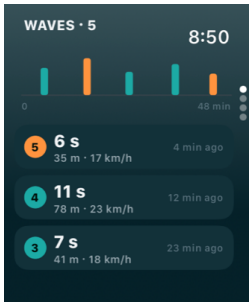
Session on the Apple Watch is Garmin's Session, inside the same app: it records the session as a **Surfing** workout in Health, with its map and heart rate, and counts the waves with the same detector as Session on Garmin, second by second, with the GPS, the accelerometer and the barometer (the waves without GPS too, which the Apple Watch hardly needs: its GPS usually has a position on the wave). The rest comes out the same too: you're paddling when the accelerometer feels the rhythm of your strokes (without it, from the GPS speed); the metres paddled are the time paddling times your paddling speed, which the watch measures and remembers from one session to the next; the beach is the spot's if you go in less than 3 km away, and otherwise it learns it on the paddle out; and the best wave is the one with the highest score (duration and speed), not the longest. Sessions go to the iPhone, where you see the waves on the satellite (Sessions).











Before you go in: Home

Scrolling down with the Digital Crown past the forecast days. It's Garmin's Home screen:

- **At the top,** the spot, the GPS under the time and the **Detection** from Settings → Session. Your level on the iPhone (Profile → Your surfing) picks it when it changes: beginner, Whitewater; intermediate, Wall; advanced, Performance. Whatever you choose on the watch afterwards stays, as on Garmin. By default, Wall.
- **Four cards:** the **waves** over the spot's rose, with how they hit the beach (head-on, angled, shadowed); the **wind**, with its class (offshore, cross-shore, onshore); the **tide**, with the day's curve and the next high or low; and the **water**, with the drop in the water's colour (as on the forecast) and the recommended wetsuit (The recommended wetsuit).
- **The GPS,** top right: a red circle that blinks while it looks for a signal and a green tick once it has one, as on Garmin. It is on only while you look at Home: lowering your wrist or moving to another page turns it off, to save battery, and when you come back it takes a few seconds to find the signal. **Start** starts the session; with no signal it asks **No GPS**: **Start anyway** or **Wait** (Starting).
- **The session's spot:** with the GPS's first good position, the one nearest to you, and again once in the water (the first time you paddle with GPS), so starting on the sand doesn't leave the session with the spot next door; before your first wave, the beach's direction and the take-off zone also become the new spot's. The one you picked by hand holds if you're less than 5 km away; if not, the session is the spot where you are. If you started without a signal and the spot changes, it takes the new spot's conditions.
- **The board** you take, on the middle button at the bottom, between Settings and Today, with Garmin's board icon (on Garmin it goes top left on Home, along the edge): the one in Settings → Session → Board, with its length and litres. Tap it to change it: it opens that list, and picking one takes you back to Home. It's away from Start, so you don't start a session by mistake. With **None** it doesn't show. It's kept in the session, and the metres paddled come from your paddling speed with that board.

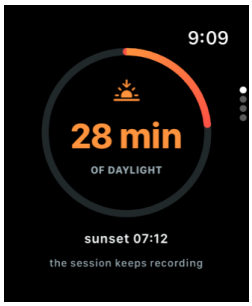
In the water: five pages

The Digital Crown moves from one to the next, in Garmin's order with End last. They all sit on your background (Settings → Background). Forecast and Waves go back to Session by themselves after 30 seconds, as on Garmin; Take-off stays, because you're following its arrow.

1. **Session:** what you're doing, in its colour (**PADDLING**, **ON A WAVE** and **WAITING**, which says for how long: **WAITING 3:12**; duck diving counts as waiting, and it changes looking at the last 20 seconds, as on Garmin); the session time, big; the waves and how long since the last one; the time split between surfing (teal), paddling (blue) and waiting (orange), what you're doing lit and the rest dimmed; and at the bottom the heart rate, the GPS and the tide.
2. **Take-off:** a compass that turns with the watch (north in red), with the arrow and the distance to the take-off zone and to the entry. The zone is where you caught the most waves this session: the middle of the group of waves that started within 30 m of the one that gathers the most seconds, the longer ones weighing more; with two waves far from each other, where the longer one started (as on Garmin); before the first one, the one from your earlier sessions at that spot. It's Garmin's Take-off page. The current and the swell period you felt on the board no longer show up: the wrist's GPS and accelerometer can't measure them (Current and drift).
3. **Forecast:** the spot's forecast for the day, like the forecast page, with your stars over the best hours. It's Garmin's Forecast page: it doesn't change day, and tapping it does nothing (neither the spot picker nor Refresh). If there's no new one, it shows the last one downloaded with when it's from ("AS OF 07:10").
4. **Waves:** the session over time, one bar per wave (taller the longer it lasted, teal the rights, orange the lefts and white a straight one, as on Garmin), and the last three, with the best one marked with its star.
5. **End: Pause** (the time and the detection stop, as Pause in Garmin's START menu; Session says **PAUSED** in yellow and **Resume** shows up here; a wave the watch was still finishing counting counts when you pause, with its tap on the wrist), **Lock for the water** (the watch's Water Lock: the screen ignores drops; to unlock it, press and hold the Digital Crown), **Waves · 5 · 3 attempts** (all the waves, newest to oldest, with their time, their side and whether it was frontside or backside with your Stance, the strokes that caught each one (those of the arm wearing the watch, as on Garmin) and the manoeuvres; the best one with its star, as the list in Garmin's START menu) and **End**. If you don't touch anything, it goes back to Session by itself after 20 seconds, as Garmin's START menu closes.

Each wave counted: the watch taps your wrist (unless **Vibrate on detection** is off, in Settings → Session) and shows the wave for 4 seconds, or until you tap it: its number, the seconds, the metres, the top speed, whether it went right, left or straight, and the best so far. In Health, each wave is a segment of the workout (**Lap per wave**), with its side, whether it was frontside or backside and which wrist the watch was on, like Garmin's lap.

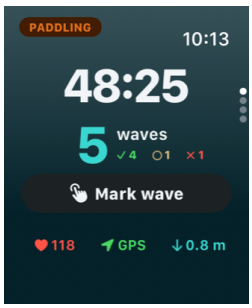
Alerts: like Garmin's, each one vibrates long and shows a card with its ring, its figure and "the session keeps recording". It goes away by itself after 8 seconds, or sooner with a tap. They're turned on and off in Settings → Session → **Alerts**.



Alert	When	By default
Sunset	30 minutes before the sun sets, with the minutes of daylight left on the ring; under the midnight sun, or when the sun sets after midnight, it doesn't alert	on
Tide	When high or low tide comes (in the hour it falls), with its time and height	on
Drift	If, while waiting, you drift farther than the distance below from the take-off zone (10 seconds in a row, so a GPS jump doesn't set it off), after having waited within it: walking to the water doesn't set it off; when you are back within that distance, two short buzzes and "back at the spot", and it can alert again	on
Distance	How many metres away the drift alert goes off: 10, 20, 30, 50, 75, 100, 150 or 200	20 m
Every 30 min	Every half hour of session, with the waves so far	off

Sunset and tide come from the spot's forecast, in the spot's time.

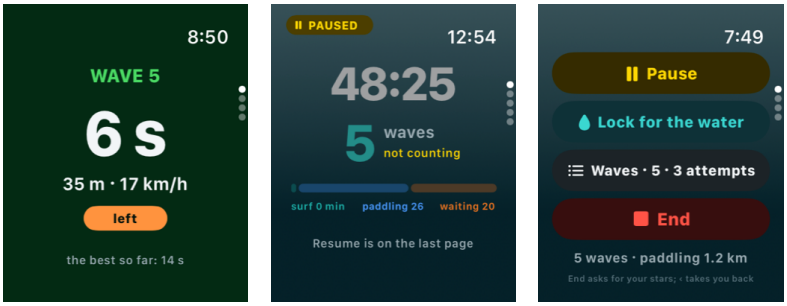
Marking a wave (what BACK twice does on Garmin, Marking waves): **Automatic** is the default, counting the waves on its own. To see how well it counts them with your waves, choose **Calibrate** in Settings → Session → Mode: the Session page gets **Mark wave** where the time split goes, and you press it when each real wave ends (it counts from a little before you stand up to a minute after). The watch taps your wrist twice and the button turns green. Under the waves go your marks against what it counted: ✓ **good**, ○ **missed** (you marked it and it didn't see it) and ✗ **extra** (it counted it and you didn't mark it); on the summary, the three counts; on Waves, a green dot over the marked ones and a tick in the list.



- **Without touching the screen:** the fingers' **double tap** (Series 9 and Ultra 2 onwards) presses Mark wave. On an Ultra, the **Action button** marks too: choose Surf Dawn in the watch's Settings → Action Button → Workout. The first press starts the session and the next ones mark a wave, also with Lock for the water; the Action button with the side button pauses and resumes.

- **Mark in Automatic** (Settings → Session) keeps the button in Automatic too, without the counts.
- Unlike Garmin, Calibrate doesn't keep a second-by-second log with the raw accelerometer: the Apple Watch has no FIT file.

If the app closes while recording, watchOS opens it again and the session goes on where it was, with its waves, its time, what you paddled and its pause, and the watch taps your wrist. The seconds it was closed don't count waves. If it closed on the summary, it goes back to the summary. If the workout is gone (for example, because the watch turned off), the session is saved without stars when you open the app, as on Garmin, and stays in Health without the map or the heart rate. If watchOS stops the workout while you're recording (for example, because you opened another workout app), Session says **The workout stopped.** in the water: the session is kept up to there, and ending it saves it all the same. If the iPhone wasn't connected, the session reaches it the next time they connect.

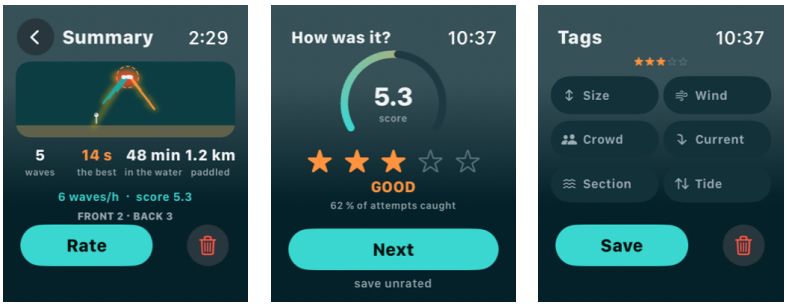


When you come out: the summary

End pauses the session and goes on to the summary, one step after another as on Garmin:

1. **Summary:** your waves seen from above (the sea at the top, the sand at the bottom) with **where you paddled** as a warm glow, the number of waves, the best one, the time in the water and how far you paddled, and the waves per hour with the session's **score**, from 0 to 10: Garmin's, which looks at the waves per hour, how long they lasted, how many you caught of the ones you tried and the longest (with few waves they weigh less: a single wave, however long, doesn't make a 10 session). Below it, **FS** and **BS** (frontside and backside): how many waves you rode facing the wave and with your back to it, with your Stance (in Calibrate, your marks go there). The ‹ arrow goes back to the water with the session paused (**Resume**, on End, keeps recording). **Rate** goes on (with **Rate when saving** off, the button is **Save** and saves without stars, like START on Garmin's summary).
2. **How was it?:** the score on an arc and your stars, which start at 3: the Digital Crown or a tap changes them, from BAD to EPIC. Below, what your session says, for example "62 % of attempts caught". **Next** goes on to the tags; **save unrated** saves it without stars.
3. **Tags:** Size, Wind, Crowd, Current, Section and Tide, to remember what was special about that session; tap the ones that apply and they turn green. **Save** sends it to the iPhone, with your stars and your tags, and keeps it in Health as a Surfing workout, with the map and heart rate.

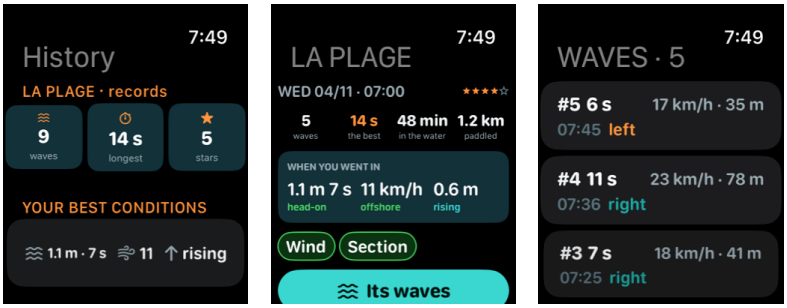
The bin, on the summary and on the tags, asks **Discard the session?**, as on Garmin, and if you say yes nothing is kept: not on the iPhone, and no workout in Health.



- **Your history:** the watch keeps your sessions in History, and the iPhone keeps them all; if the iPhone isn't nearby, it hands them over when it is again.
- **What the forecast said:** as on Garmin, the session keeps the stars the forecast gave its hours and the day's best window, from the forecast the watch had when you went in; you see it on the iPhone, in the session (A session).

- **Stars and tags** are changed later on the iPhone, in the session.
- **It's a first version:** with recorded sessions the detector gives the same waves as on Garmin, but on the Apple Watch it's still being tested in the water.

History

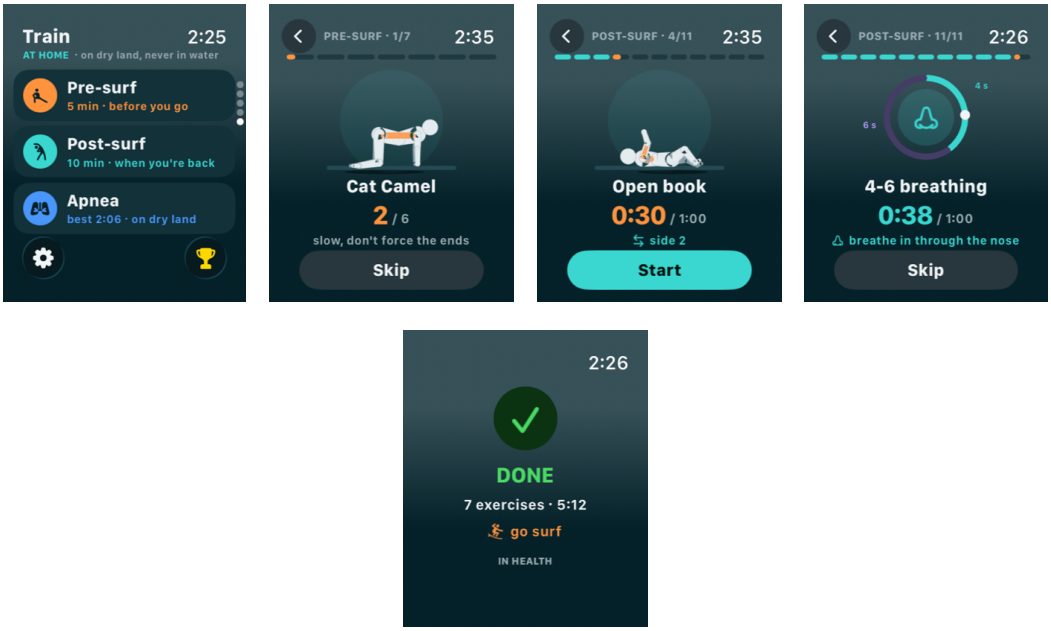


Settings → History is Garmin's History, with the sessions recorded on this watch: - The **records of the spot** you're at: most waves in a session, the longest wave and your best rating. - **Your best conditions** at that spot: how the waves, the wind and the tide were in the session you gave the most stars. - **Your sessions**, newest to oldest (all spots): date, spot, waves and stars. A tap opens one: the day and time, your stars, the waves, the best one, the time in the water and how far you paddled, how the sea was when you went in and its tags. - **Its waves:** in the last 10 sessions, each wave as in the list in the water; older ones have their waves on the iPhone.

The watch keeps up to 200 sessions, 60 per spot, as Garmin does; the iPhone keeps them all.

Train

Session's routines and apnea on Garmin, on the watch: **Pre-surf** (5 minutes, at home before you go), **Post-surf** (10 minutes, when you're back from the water) and **Apnea**: the apnea test and the CO2 and O2 tables. They're the same exercises, times and tables as on Garmin and on the iPhone. They have their own page, scrolling down with the Digital Crown after Home, as DOWN on Garmin's Home; while you're recording a surf session they're off.

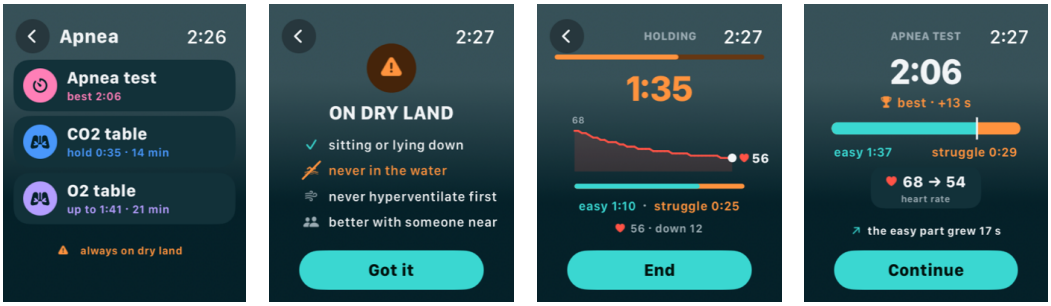


- **One exercise a screen:** at the top the routine and the step ("PRE-SURF · 1/7") and a bar with a segment per exercise, teal the ones done and orange the one going, which fills with its time. In the middle, the figure doing the movement (the iPhone's, in orange what works; the squat and the pop-up face your Stance); at the bottom the name, the reps or the time, and the cue.

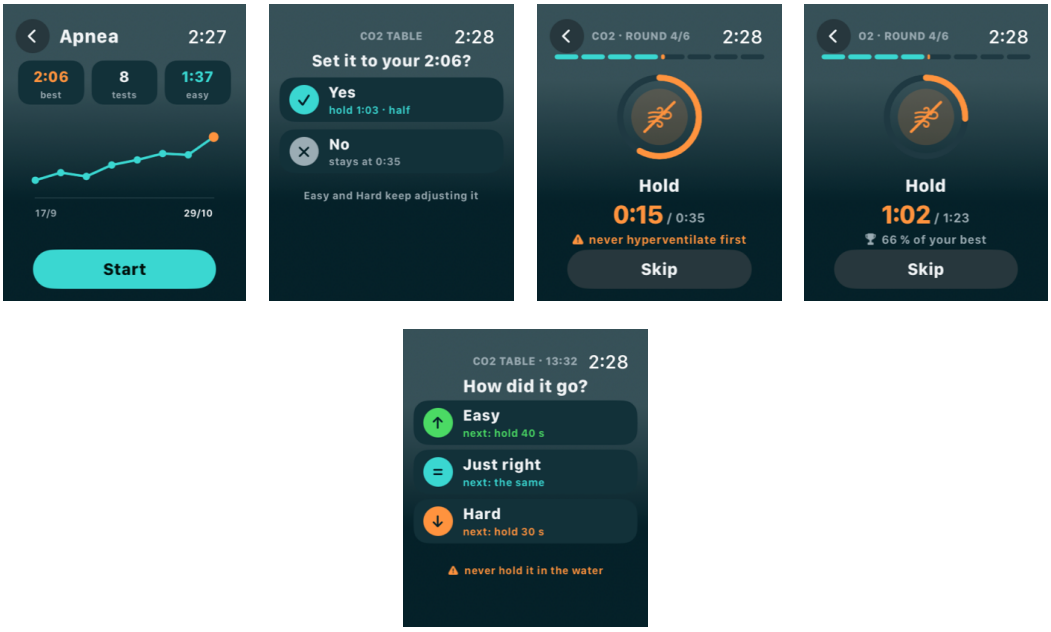
- **The button at the bottom** is Garmin's START. In the ones with reps, **Done** goes to the next one. The timed ones wait for **Start**, so you can get in position; then they count by themselves ("0:18 / 1:00"), move on with a tap on your wrist and **Skip** skips them. In the ones done per side, halfway it says "side 2" and stops: once you're on the other side, **Start** goes on with the other half (the arm circles don't stop: they say "now backwards" and go on). The Cat Camel of both routines and the neck of Post-surf go at a pace: they also wait for **Start** and say which one you're on ("4 / 10"). The ‹ arrow leaves.
- **4-6 breathing:** still until **Start**; then, the ring with 4 seconds to breathe in in teal and 6 to breathe out in lilac, and a dot going round it; in the middle, the nose when breathing in and the wind when breathing out. The watch taps your wrist at each change.
- **At the end, Done** with the exercises and the time, and it goes back to Train by itself after 4 seconds.
- **In Health:** each routine is saved as a workout, Pre-surf and Post-surf as **Flexibility** and the apnea and the tables as **Mind and Body** (on Garmin, Breathing), with the heart rate and a segment per step, like the laps in Garmin Connect. If you leave with ‹ before the first minute it isn't saved; after it, it is, with what you did, also if the app closes.
- **The screen:** the workout keeps the app in front. With your wrist down the screen dims (on watches with an always-on display it keeps showing the step) and when you raise it you're on the step, which kept running. watchOS doesn't let an app keep it on, as Garmin does every 10 seconds: that's why each change (another exercise, the other side, breathing in or out) taps your wrist.

Apnea, always on dry land

Apnea opens the **Apnea test** (below it, your best), the **CO2 table** (how long you hold and how long it lasts) and the **O2 table** (how far it goes; without any test it says "the test first" and opens the test).



- **The test:** the first time the **On dry land** warning shows up (sitting or lying down, never in the water, no hyperventilating before and better with someone nearby); after that, your history: your best, how many tests you've done, the last easy part and the curve of the last 8. The steps are Garmin's: 1:50 of 4-6 breathing (**I'm ready** cuts it short), 10 seconds for a normal breath in, and hold.
- **While you hold:** the time, the bar that fills once a minute and the curve of your heart rate, which usually goes down (the diving reflex). When you feel the **first contraction** (the diaphragm pushing to breathe), tap **Contraction** (on Garmin, DOWN): the strip turns from teal to orange and the hold is split into the **easy part** and the **struggle**. When you pass your best, a tap on your wrist. **End** ends it.
- **The result:** the time against your best ("best · +13 s"), the easy part and the struggle, the heart rate at the start and the lowest, and how much the easy part grew or shrank since the last test that had it. A hold under 10 seconds isn't saved. **Continue:** if half of the test changes the CO2 table by 5 seconds or more, it asks **Set it to your 2:06?**, as on Garmin.
- **The tables** run by themselves, with the round at the top ("CO2 · ROUND 4/6") and, in the O2 one, what part of your best each hold is. At the end, **How did it go?**: **Easy**, **Just right** or **Hard**, each with how the next one turns out (as on Garmin).



- **Your apnea tests and tables are also on the iPhone and your Garmin:** what you do on the watch goes to the iPhone, and from the iPhone comes what you did there or in Session on Garmin: the tests (with your record), where the CO2 and O2 tables are at and the routines of the week. If a table changed in two places, the last one you changed stays. It happens by itself, the next time the watch and the iPhone connect.
- **No SpO2:** the Apple Watch doesn't give apps the blood oxygen while you hold; the heart rate, yes.

  Always on dry land, sitting or lying down, never in the water or while driving: a long hold can end in a blackout without warning, and in the water that kills. Before holding, a normal breath in: hyperventilating doesn't give you more air and makes a blackout more likely.

Differences from Garmin

What the Apple Watch does differently, and why:

	Garmin	Apple Watch
The watch face	The Surf Dawn face	There isn't one: Apple doesn't allow other apps' watch faces. The complications put the spot on Apple's watch faces
Apps	The face, Forecast and Session, each with its own settings	A single app, with a single set of settings
The morning alert	At the time you choose or **At wake time**	At the time you choose, from 06:00 to 09:00. There's no **At wake time**: watchOS doesn't give apps the sleep schedule
Where the alert stays	On the glance (Garmin doesn't keep app notifications)	In Notification Center and in the Smart Stack
The alert's star	On the notification's icon	On the notification when you look at it: watchOS doesn't let apps change the icon
Last try, offline	"-104 no phone": the watch reaches the internet through the phone	"no connection": the watch gets there through the iPhone, Wi-Fi or its own cellular
The forecast without opening the app	Session downloads it every 3 hours	It asks for it every 3 hours, when watchOS gives it background time: it can take longer
When the spot's clock changes	It asks again, if the watch is in the spot's time zone (it has no time zone database)	It corrects the hours with the spot's time zone, without asking again

	Garmin	Apple Watch
Complications	Best hours, Waves now and Wind now, on Face It and on Connect IQ watch faces	The same three on Apple's watch faces: the best hours on the rectangular and the inline, the waves on the circular and the corner (with the next tide), and the wind on its own, in **Surf Dawn Wind now**
Session in the water	Session, Take-off, Forecast and Waves, with the buttons	The same and End, with the Digital Crown
The menu	START: Continue, Pause, Waves, Save, Discard and Mode	The End page: Pause, Lock for the water, Waves and End; Discard is on the summary. It goes back to Session by itself after 20 s, like the menu
Where the session ends up	Garmin Connect (and the iPhone, if you connect it)	Health and the iPhone
When the session reaches the iPhone	A few seconds after you leave Session, from the background, or with Session still on Home for about 20 s, because the watch stalls for a moment while the app sends (With the iPhone app)	When you save: sending it doesn't stall the watch
If the app closes while recording	The session is saved without stars	watchOS opens it again and the session goes on; if the workout doesn't come back (the watch turned off), it's saved without stars, as on Garmin
The current and the pop-up	Not shown; they stay in the session's FIT file to be checked	Not shown; the pop-up is saved with each wave, and the current isn't worked out (there's no FIT file to leave it in)
Marking a wave	BACK twice	Mark wave on the Session page, the double tap or the Ultra's Action button; Calibrate keeps no raw log
Counting waves with the watch's own activity	The Waves and Wind field, in Garmin's Surf (Your waves with the watch's own Surf): there the GPS works better than with an app recording	None: watchOS doesn't let other apps put data in Workout. Nor is it needed, because on the Apple Watch Session has the usual GPS
The water with the watch's own activity	The Water Temp field, in Garmin's Surf or any activity in the water (Water temperature with the watch's own Surf): the thermometer's from the 8th minute, before it the forecast's	None: watchOS doesn't let other apps put data in Workout, and the Apple Watch's water thermometer needs an entitlement from Apple (below)
The positions that count waves	Those the watch rates usable or good	Those accurate to 20 m or better; those of 20 to 50 m (few satellites, a wet antenna) are kept for the track and the speed shown
Routines and apnea	In Session: DOWN on Home	In Train, the page after Home (and on the iPhone, Train)
Where the routines go	Garmin Connect: Flexibility and Breathing	Health: Flexibility and Mind and Body
The screen in a routine	It turns on at each change and every 10 s	It dims with your wrist down and comes back when you raise it: watchOS doesn't let an app turn it on. Each change taps your wrist
The apnea test	Heart rate and SpO2	Heart rate: the Apple Watch doesn't give apps the SpO2

	Garmin	Apple Watch
Watch on	Settings → Watch on	Not needed: the Apple Watch knows which wrist it's on (the watch's Settings → General → Orientation)
Your stars	Settings → Stars: **History + estimate** (factory default), History only or No	History only, no setting: they appear once you've rated similar sessions at that spot
Where you see your stars	In Session (Home and its conditions), not in Forecast: they're two apps and on the watch they don't share data	In Forecast and in Session: it's the same app

What watchOS doesn't allow, so the Apple Watch won't have it:

- **At wake time** for the alert: watchOS doesn't give apps the sleep schedule.
- **The Surf Dawn watch face:** Apple doesn't allow watch faces from other apps.
- **Choosing the GPS mode** (Multi-band, SatIQ, GPS only): watchOS doesn't let an app choose it.
- **Keeping the screen on** in a routine or a session: watchOS doesn't let an app turn it on or stop it from dimming.
- **SpO2 in the apnea test:** the Apple Watch doesn't give apps the blood oxygen.
- **The water temperature measured by the watch:** only some Apple Watches have the sensor, and an app can read it only with a special entitlement that Apple has to approve. For now it's the forecast's, and on the iPhone the session says so: **forecast** under the water, instead of **water**.
- **Leaving a review** from the watch: the Apple Watch doesn't open the store page; you leave it from the iPhone.

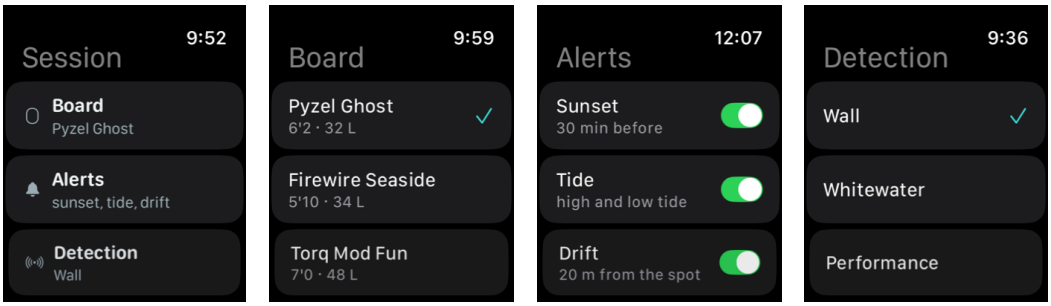
Settings

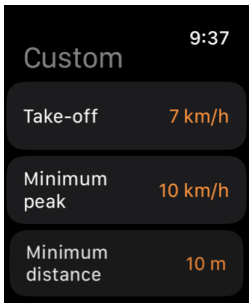
The gear, bottom left on the forecast.

Setting	Values (factory default in bold)
Spot	opens the picker (it says **Automatic** and which one is the nearest)
Best spot today	opens Today with the best one
History	your records at the spot, your best conditions and your sessions (History)
Session	Session's settings: Board, Alerts, Detection, Custom, Stance, Vibrate on detection, Rate when saving and Lap per wave (below)
Morning alert	**Yes** or No
Alert time	from **06:00** to 09:00, every 15 minutes
Last try	how the alert went last time (shows up after the first try)
Complications	**Yes** or No: off, Surf Dawn's stay empty and request no data (Complications)
Waves	**Total** (the whole sea) or Swell (only the groundswell)
Height	**Metres** or Feet
Wind	**km/h** or Knots
Background	**Sea**, Night, Graphite or Forest, also in the water
Language	**Match the watch**, Español, English or Português: the app's, the alert's, the complications' and the Smart Stack's
Refresh	requests the data again; below it, it says how old the current data is
Version	the installed version

Session settings

Settings → **Session** has the Session settings from Garmin that the Apple Watch already has, with the same names and the same defaults:





Setting	Values (defaults in bold)
Board	Your boards from the iPhone (Profile → Boards), each with its length, litres and sessions, or **None**. The one you pick stays for the next sessions; with none picked, the first one. Swiping one to the left takes it off the list (the iPhone sends it again if you change your boards)
Alerts	Sunset (**yes**), Tide (**yes**), Drift (**yes**) and Every 30 min (**no**): see Alerts
Vibrate on detection	**Yes** or No: the tap on your wrist with each wave
Rate when saving	**Yes** or No: off, the summary saves without asking for stars or tags
Detection	**Wall**, Whitewater, Performance or Custom: **Whitewater** for small, slow waves or whitewater, **Wall** the everyday one, **Performance** for big, fast waves (How waves are counted). Your level on the iPhone picks it when it changes
Stance	**Goofy** or Regular: each wave comes out frontside or backside (in the summary, in Waves and in Health), and the squat and the pop-up of Pre-surf face your way. Your stance on the iPhone (Profile → Your surfing) sets it when it changes
Mode	**Automatic** or Calibrate: with Calibrate, Mark wave and your marks against what the watch counted (Marking a wave)
Mark in Automatic	Yes or **No**: Mark wave in Automatic too
Gyroscope	**Yes** or No: the manoeuvres from the wrist's turns (an estimate: How waves are counted); off uses less battery and only changes of direction count. The pop-up, which also uses the gyroscope, isn't shown yet (The pop-up)

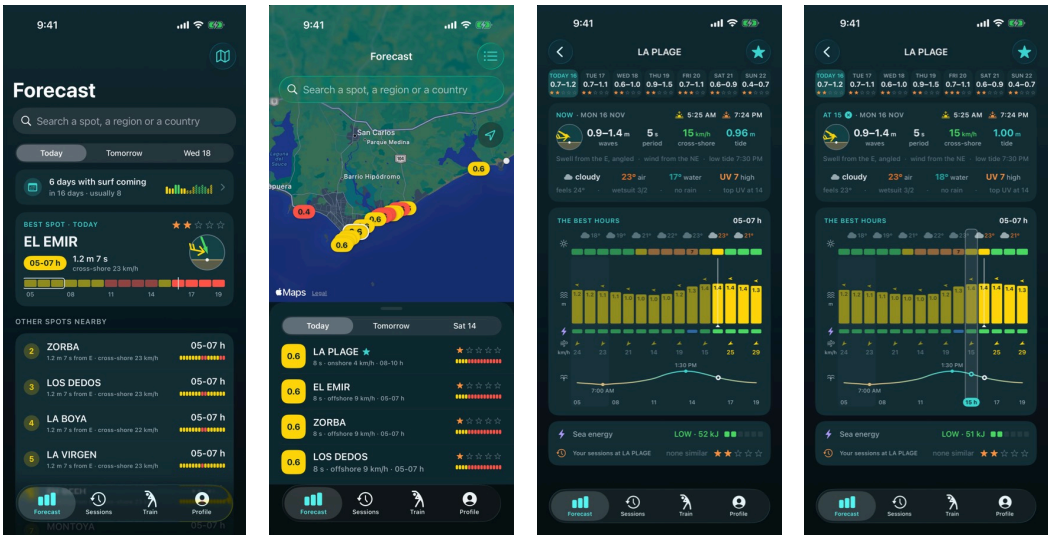
Setting	Values (defaults in bold)
Custom	Your own thresholds, with Garmin's values: Take-off (**7** km/h), Minimum peak (**10** km/h), Minimum distance (**10** m), Minimum duration (**3** s), Between waves (**15** s) and Towards the shore (**yes**: only waves towards the beach). Changing one turns the Detection to Custom
Lap per wave	**Yes** or No: a segment per wave in the Health workout (Garmin Connect's lap per wave)

The watch's settings are its own: the iPhone's don't carry over by themselves. Four things do go from the iPhone to the watch: the **background**, with Profile → Settings → Background → **The same on the watches** (on by default), your **level** and your **stance** from Your surfing, which pick Session's Detection and Stance when they change, and your **boards** (Profile → Boards). The wrist isn't needed: the Apple Watch already knows which one it's on. And Train goes back and forth between the two.

Surf Dawn on the iPhone

The iPhone app is the week's forecast for your spots, your sessions with their waves on the satellite, Train and your surfer profile. It carries the Apple Watch app inside and also works with a Garmin: Session sends it every session you save. It's useful without a watch too, for the forecast and Train.

It has four tabs at the bottom: **Forecast**, **Sessions**, **Train** and **Profile**.



Install

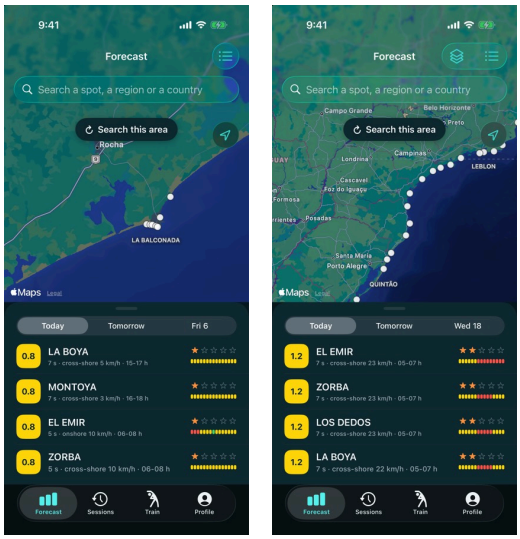
- **From the App Store:** Surf Dawn, for iPhone with iOS 17 or later. It brings the Apple Watch app with it (Install on the Apple Watch).
- **It's free**, with no ads and no account. The tips in Support Surf Dawn don't unlock anything.
- **Permissions** are asked for when they're needed: location when you open it (for the nearest spot), Photos only when you look for a session's photos, notifications when you ask for a reminder in Train, and Bluetooth only when you connect a Garmin. With only an Apple Watch, nothing about Garmin shows up.

Forecast

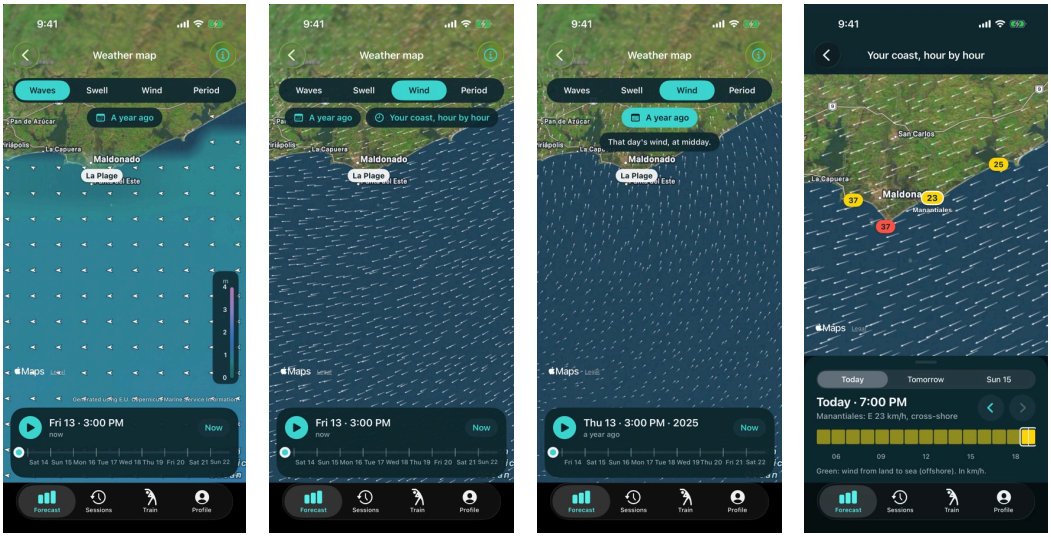
- **The best spot** of the day near you, at the top, on a card: its stars, its window ("16-18 h"), the waves and the period, the wind with its class and its unit ("cross-shore 20 km/h"), the **spot's rose** (how the swell and the wind hit the beach at the middle hour of the window) and a strip with the hours from 05 to 19 in each one's colour, with the window marked.
- **Other spots nearby,** below, in order, each with its window, its waves and where the swell comes from ("0.6 m 7 s from S"), its wind and its strip of hours. It's the same ranking as Today and the morning alert on the watches (except for your favourites), with all the spots within 25 km, or the distance you choose in Settings → **Spots within** (the watches compare the 12 nearest of your zone within 25 km).
- **Your favourites** are always on the list, with a teal star by the name (on the list and on the map's sheet; the orange stars are the day's), in the place their score gives them: they don't jump ahead of the others, so the day's best spot is always the one with the highest score. Mark a spot with the star at the top of its page. They're there even if they're farther than Spots around or in another zone: they're asked for separately, with their hours and their sunrise, and the map doesn't zoom out to show them (they stay in their place on the coast). Favourites are only on the iPhone.
- **Today**, **Tomorrow** and the day after, at the top, change the day. They're the spot's days: if your zone is in another time zone, the "now" mark and the change of day go by its clock.
- **The map** (the button at the top right): the ranking's spots on the coast, each with its height in the day's colour, and the four best in a sheet at the bottom. **List** goes back.
    - **The other spots** on the map, from your zone or anywhere in the world, are white dots with their names. Tap one to open its page: it becomes your spot, as when you search for it, and the ranking becomes that area's. From far out, with a whole region on the map (the south of Brazil, Portugal), there is a dot every so often, so you can see where

there are spots.
    - **Search this area** shows up at the top when you move the map away from the ranking's spots, to another part of your coast or to any region in the world, close up or from far out: the spot nearest the middle of the map becomes your spot, and the map and the sheet show the heights and the ranking of the spots around it. The map stays where you left it, unless you were looking from so far out that those spots would be tiny: then it zooms in on them.
    - **Zoom in to search** shows up instead when the map shows more than a region (a whole continent): tap it and the map zooms in where you are looking. Where there are no spots (inland, the open sea) it says **No spots in this area**.
    - **The arrow** (on the right) takes you to where you are. There, Search this area goes back to **Automatic**.
    - **The layers button** (at the top, next to List) opens the weather map.
- **Search** (at the top): a spot from anywhere in the world by its name, its region or its country, regardless of capitals or accents. Tapping it downloads its zone if needed, makes it your spot and opens its page. The app downloads the list of the world's spots by itself a few seconds after opening; new spots show up the next day.
- **What's coming,** the line under the days: how many days with surf are coming in the next 16 ("8 days with surf coming": days with some spot nearby at 3 stars or more), with a little bar for each day. Tap it to see them (What's coming).
- **Tap a spot** to open its page. Swipe down to request the data again: the ranking (the three days and What's coming's 16, in a single request) is requested at most once every 5 minutes, because with many spots around each request uses up a lot of the Open-Meteo quota. If it runs out (its limit is per connection: your Wi-Fi or your carrier), Forecast says **TRY LATER** and asks it nothing until it is back, in a while.

The spot the ranking centres on is the one in Profile → Settings → **Spot**: **Automatic** (the nearest to where you are) or the one you choose. How far it looks is set by **Spots within**: 25 km out of the box, or 50, 100 or 150 km. Further out, the spots of the neighbouring zones come in (the ones the phone doesn't have are downloaded on their own, once it has downloaded the list of the world's spots), each with its zone's wave model.



The weather map



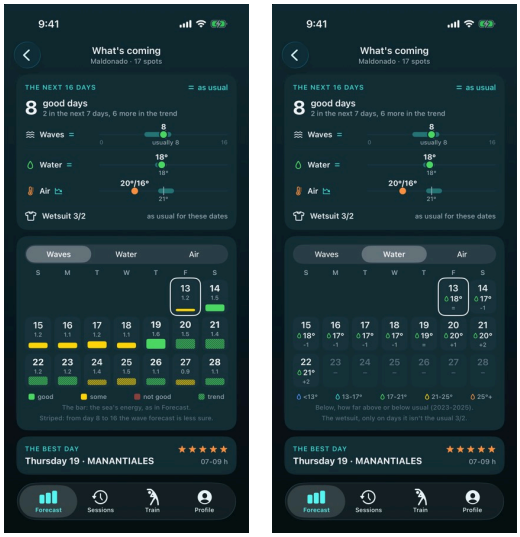
The sea on the satellite map, to see where the waves come from and where the wind is going, today and the next few days. It opens from the Forecast map, with the layers button at the top. It opens centred on your spot (the one in Settings → Spot), with its name, looking a little out to sea.

- **The layers**, at the top: **Waves** (all together), **Swell** (the biggest swell), **Wind** and **Period**. The colour says how much there is: almost clear when there's little, then teal, blue, lilac and pink when there's a lot. The scale on the right gives the metres (or the seconds, on Period). It uses no green, yellow or red: those colours are kept for whether a spot works or not.
- **The white arrows** are the waves: they point where they're going, and they're bigger the higher the waves.
- **The wind** is thin white lines that follow its path; the longer and brighter, the harder it blows. It goes up to 5 days.
- **The bar at the bottom** goes through the hours, 3 at a time, up to 10 days: drag the dot along the days, tap **play** to watch it move (each hour goes on once the map has drawn it), or **Now** to go back.
- **Tap the sea** anywhere to see what's at that point at that time: the waves, the swell with its period and where it comes from, the sea the wind raises, and the wind.
- **A year ago** (the button under the layers) shows the same days last year, to compare: the waves at that time and that day's wind at midday. The bar says the year.
- **The (i)**, at the top right, says where the data come from.

Your coast, hour by hour (the button that shows up on the Wind layer): the wind over your beaches, hour by hour, for a day of the ranking (**Today**, **Tomorrow** or the next). Each spot near you carries its wind in km/h (or knots) in its colour: **green** if it blows from land to sea (offshore), **yellow** cross and **red** onshore. It's the same wind as on its page. Below, the hours from 05 to 19 of the chosen spot in those colours: tap one or use the arrows to change the hour, and tap another spot on the map to see its own. When spots are very close together, the map shows the best ones of the ranking and hides the ones that overlap.

The waves come from the wave model of **Copernicus Marine**, from the European Union; the wind from **GFS** (NOAA, United States), the same model as the spots' wind (Data and models). The weather map is only on the iPhone: the watches have no room for a map.

What's coming



What's coming is the days that have a wave forecast, from today on, to know whether there will be waves this month and the next, how the water will be and which wetsuit to take:

- **The next 16 days:** how many have surf, how many of them fall in the next 7 and how many in the trend, and whether it's coming **better than usual**, **as usual** or **worse than usual** for those days in your zone. A day has surf when its best spot nearby has 3 stars or more (Forecast's green). When the 16 days reach the next month, each month goes below with its own ("December, 1 to 4: 2 good · usually 1").
- **Waves, water and air against usual:** each on a bar. The band is what's nearly always there on these dates (the middle half of the years), the tick is usual and the dot, these days; the arrow next to the name says whether they come more, the same or less than usual. The waves are the days with surf of the 16; the water, its average temperature on the days with a sea forecast (about 11), with the drop in its temperature's colour; the air, the high of the 16 days, with the low next to it.
- **The wetsuit:** the usual one for these dates, from the water and the air's low (as on a spot's page), and the days that want another ("16-17: 4/3 + boots").
- **The calendar:** at the top you choose **Waves**, **Water** or **Air**. In Waves, each day with the wave height at its best spot and a bar. The colour says whether it's good (green), so-so (yellow) or not good (red); the height is the sea's energy at that beach, Forecast's. From day 8 on the bars are striped: that's the **trend**. The first day of a month carries its name. In Water, each day's water temperature with its drop, below it how many degrees above or below that day's usual, and the wetsuit on the days it isn't the usual one (with a boot if it wants boots). In Air, each day's high and low, and below the high against usual.
- **What the trend is:** wave models reach 16 days, but the further out, the less they get right. The first week usually gets the size, the period and the direction right; from day 8 on it's good for seeing whether a swell or a flat week is coming, not for planning the hour or the spot. It can change a lot from one day to the next, so those days are striped, counted apart ("6 more in the trend") and worth checking again as they get closer: once they're in the next 7 days they're no longer striped.
- **The best day:** the one with the most stars, with its spot, its waves and its window.
- **Tap a day** to see its spots as in Forecast, with your favourites (also those from other zones) in the place they get, and a spot to open its page.

Beyond 16 days no model has a wave forecast, so nothing is drawn: no empty days and no made-up ones. **Usually**, for the waves, is the days with surf of each month from 2016 to 2024, with the same calculation as Forecast on Open-Meteo's history of waves and wind (ERA5), adjusted to the height of your zone's model; for the air, the high and the low of those years, taken to your zone's wind model the same way; and for the water, the forecast's sea temperature, whose history only starts in 2023 (Data and models). Every zone has it and it uses no requests: the zones the app comes with have it inside, and the iPhone downloads the others' from the data repo once a week (some 50 KB from GitHub, nothing from Open-Meteo). A zone just added has it a few days later; meanwhile What's coming shows its days without comparing them, and the water and the air without bars. The 16 days of waves come in the same request as Forecast's ranking; the water and the air are two more requests, only when you open What's coming, kept for 3 hours. What's coming is only on the iPhone: the watches show three days.

A spot's page

Everything fits without scrolling on an iPhone Pro Max; on smaller ones you scroll.

- **The star** (top right) makes it your favourite: it fills in, and the spot is always in sight in Forecast, with its star, in the place its score gives it. Tap it again to take it out. Your favourites are kept with the settings, in the iPhone's backup.
- **The week,** at the top: the seven days, each with its waves (from the average wave to the sets, in its best window) and its stars (those of its best window, 0 to 5). The day you're looking at is filled in soft teal. Tap one to see it. Green, yellow and red are left to the chart below, which says how the swell and the wind come into the beach: a day can have green bars and few stars if the waves are small. The week is iPhone only: the watches show three days.
- **Now** (on another day, the middle hour of its best window): the day and the sunrise and sunset; the **spot's rose** (the sea at the top and the beach at the bottom, with the swell, the other swell and the wind coming in, in the colour of how they hit the beach); the waves, from the average wave to the sets; the period; the wind with its class (offshore, cross-shore, onshore), in the colour of how hard it blows (green under 20 km/h, yellow up to 30, red at 30 or more); the tide; and a sentence with the rest ("Swell from the E, angled · wind from the E · low tide 00:30"). Below, the weather: the sky, the air, the water and the day's highest UV, with the feels-like temperature, the wetsuit, the rain to come and the time of the highest UV. The UV goes in the WHO levels: low, moderate, high, very high and extreme.
- **The best hours:** the day hour by hour, like the watches' forecast page: the wave bars in their colour, each with its height inside (on the watches the bars are too thin and the height goes above them, where it changes), the arrows of the swell and the other swell, the wind (the arrow in the colour of how it hits the beach and the speed in that of how hard it blows, with the gusts under it, in grey, at the hours when they beat the wind by 10 knots or more; the watches don't show them), the tide and the best-hours band. Above, every two hours, the sky with the air temperature beside it (and the chance of rain under it, from 20 %), and the UV in cells of its level. Right under the waves, the sea's energy hour by hour.
- **Tap an hour** on the chart to mark it: its column, its number in a turquoise pill and its dot on the tide. The card at the top becomes that hour's ("AT 15 ✕"), with its exact figures, and so do the energy and your sessions. Tap it again, or the ✕, to go back to now. With VoiceOver, swipe up or down to move from hour to hour.
- **At the bottom,** the sea's energy and **your sessions at** that spot: the stars you gave to similar conditions there ("none similar" if there are none yet).
- Swipe down to request the data again.

Sessions

They arrive on their own: those from Session on the Apple Watch when you save them, and those from Session on a Garmin once you connect it in Profile → Watches. At the top, the tab shows the month in numbers (sessions, waves, hours in the water and the mean of your stars, drawn), each against the month before: the bar is this month so far and the mark, the whole month before (with no sessions that month, just the numbers). Below, your sessions by month, each with its first photo if you added photos to it, or else with the map of its waves; swipe one to the left to delete it. Pull down to ask the Garmin for the ones missing: the top says you asked, and when they come, how many and from which watch.



A session

- **Your waves on the satellite**, over the take-off zone, with the sea at the top (the view faces where the beach faces): each wave from where you stood up to where it ended, with its number; the rights in teal, the lefts in orange and the straight ones in the text's colour; the take-off zone (the orange ring: where you caught the most waves, as the watch picks it, also in sessions saved before it picked it that way) and the entry. **Satellite** or **Map**, at the top. If the session didn't save where its waves were (those from before 27 October 2026, or older than the Garmin's last 10), you still see the satellite, with the waves drawn from the take-off zone of another session at that spot and a line saying it's approximate.
- **Where you paddled:** the watch counts the seconds paddling in 10 m squares and the app paints them as a heat map, from yellow (a little) to red (where you paddled the most), with the minutes paddling. The **Paddling** button turns it off and on.
- **Replay the session:** plays the waves across the map in the order they came, over a timeline with one bar per wave. Below, one card per wave: tap one to open it.
- **Then,** the figures (the waves, the best, the longest, the top speed, the distance paddled, the caught ones), the time surfing, paddling and waiting, and what the sea was like when you went in, with the water the watch measured. If it's the forecast's (always on the Apple Watch, and on a Garmin that didn't get to measure it), it says **forecast** underneath instead of **water**.
- **What the forecast said,** under the sea when you went in: the stars the forecast gave the session's hours and the day's best window, from the forecast the watch had when you went in, with the waves it shows (Settings → Waves: total or swell): "Forecast 3/5 · best window 07-09 h · 4/5", or "weak day" when the day had no three hours worth anything. That way you see how right it is against your stars. New sessions that started with a forecast keep it; older ones and those without one say nothing.
- **Stars and tags** are changed here (the pencil): they stay on the phone and count toward your stars in the forecast.
- **Share** (top right, the square with the arrow): sends the session as a picture the size of an Instagram story, to post there, on WhatsApp or anywhere: on top the satellite with your waves numbered (rights in teal, lefts in orange), the take-off zone, the spot and the day, and your session's first photo in a corner; below, the waves, the best one, the top speed, the time in the water surfing, paddling and waiting, how the sea was when you went in, the stars, the board and the watch, and at the foot the watches Surf Dawn runs on: Apple Watch and Garmin. Without a connection there is no satellite: the photo or your waves seen from above go instead. Always on the dark background, whatever yours is.
- **Delete session**, at the end (or in Sessions, swiping the session to the left and tapping **Delete**): for a test one or one recorded by mistake. The app asks first, and it can't be undone. The session leaves your sessions, Your numbers, your records and your spots, your stars in the forecast and, with iCloud, your other iPhones. The watch that recorded it still keeps it in its history, but it doesn't come back to the app when the watch sends it again (asking for the history), nor when you import a Your data file.

A wave

The map close to the wave, with the time you stood up and how long it lasted (the other waves, dimmed); the duration, the distance, the top and average speed, the strokes (those of the arm wearing the watch), the manoeuvres and whether you were facing the wave or had your back to it (with your stance); where it ranks among the session's waves; and the one before and the

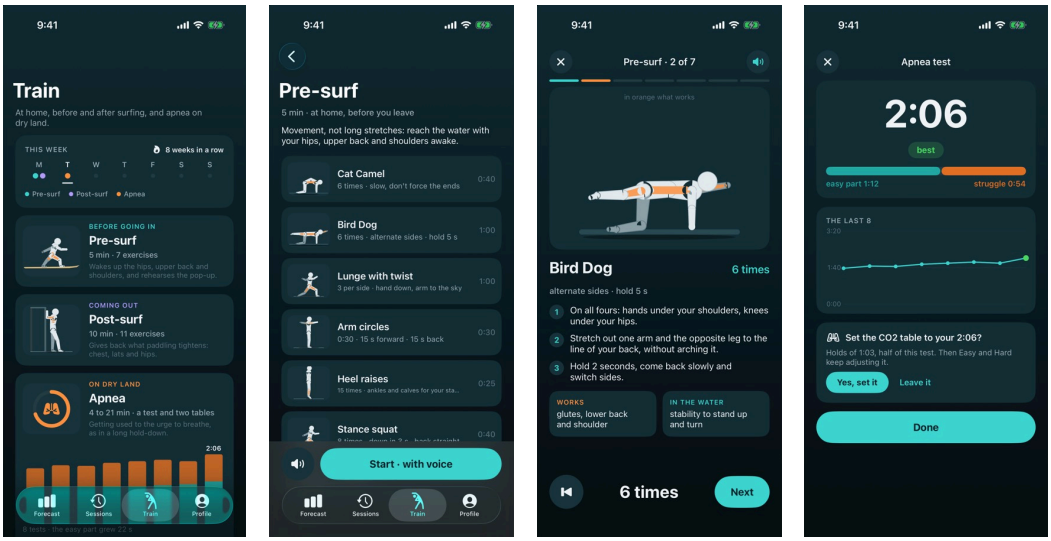
one after. Strokes, manoeuvres and the side come from Session, on the Garmin or on the Apple Watch; the pop-up isn't shown yet (The pop-up). A wave the watch counted without GPS has no distance or speed, which show "–" (How waves are counted).

The photos of that day

- **Add photos from that day → Look in the camera roll:** Surf Dawn looks for the photos taken of you during the session (from a quarter of an hour before to a quarter of an hour after) within 3 km of the spot, or with no location (those from a camera copied to the phone). Add them all or choose which ones.
- The Photos permission is asked for only then.
- **The photos stay in your camera roll:** the session keeps which ones they are. Each photo goes with the wave its time falls in; opened, it says how long after you stood up it was taken and on which wave, and it can be shared. **Remove from the session** takes it out of the session, not out of the camera roll.
- **If you gave Surf Dawn only some photos** (limited access), adding opens Apple's picker to add that day's. A photo you can no longer see shows **Allow more photos** and **Remove from the session**.

Train

At home: before and after surfing, and apnea on dry land. They're the same exercises, times and tables as Session on Garmin and Train on the Apple Watch, with each exercise better explained and with a voice. What you do on one is on all of them: your apnea tests (with your record), where the CO2 and O2 tables are at and the routines of the week go between the iPhone, the Apple Watch and Session on your Garmin, and to your other iPhones through iCloud. If a table changed in two places, the last one you changed stays.



- **Tomorrow** (or **Today**): Pre-surf 20 minutes before the best window of the best spot ("Pre-surf at 05:40"). **Remind me** sends you a notification at that time.
- **This week:** what you did each day and how many weeks in a row you've kept it up.
- **Pre-surf** (7 exercises, 5 minutes, at home before you leave): movement, not long stretches; it wakes up the hips, the upper back and the shoulders, and rehearses the pop-up.
- **Post-surf** (11 exercises, 10 minutes, back from the water): gentle 30-second stretches, no bouncing; it gives back what paddling shortens: chest, lats and hips.
- **Each exercise, one screen:** the list shows each one's figure; **Start** goes to one exercise per screen, with its figure moving (in orange what works), how it's done, what it works and what it's for in the water. The timed ones wait for **Start** and count by themselves; the ones done per side stop halfway, and once you're on the other side **Start** goes on with the other half. The Cat Camel and the neck go at a pace: they also wait for **Start** and count the reps ("4 / 6"). The voice says each step (**With voice** / **No voice**) and the screen stays on. With Reduce Motion, the figures stay still, in the starting pose with their arrows.
- **If you lock the iPhone** in the middle of a routine or an apnea table, it pauses at that second and says **PAUSED**; **Continue** goes on from there. The hold in the apnea tests is measured by the clock, so it doesn't stop even if the screen turns off.

Apnea, always on dry land

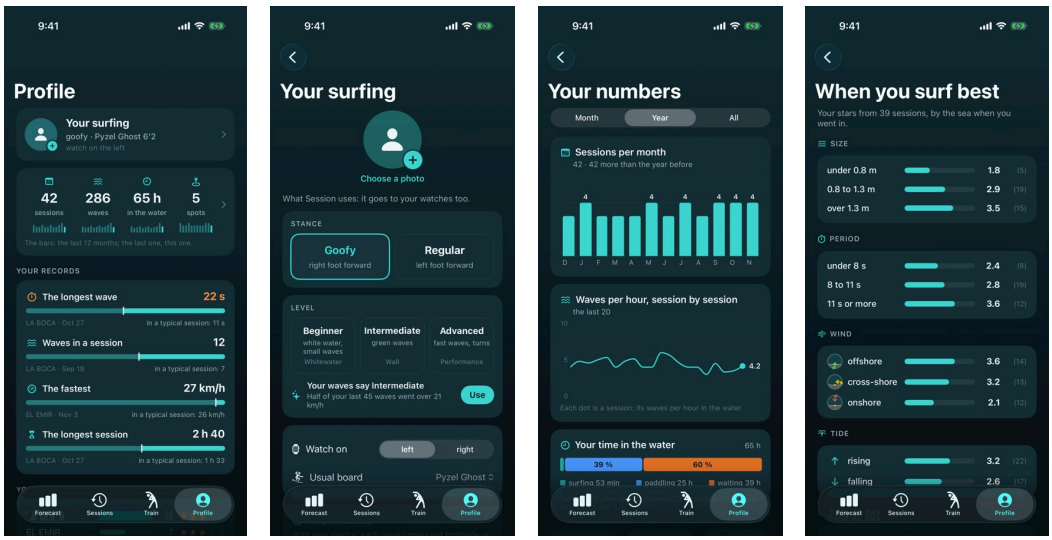
> **Never in the water or driving:** a long hold can end in a blackout with no warning. Before a hold, one calm breath in: hyperventilating gives you no more air and makes a blackout more likely.

The Apnea card shows your best and your **easy part** test by test.

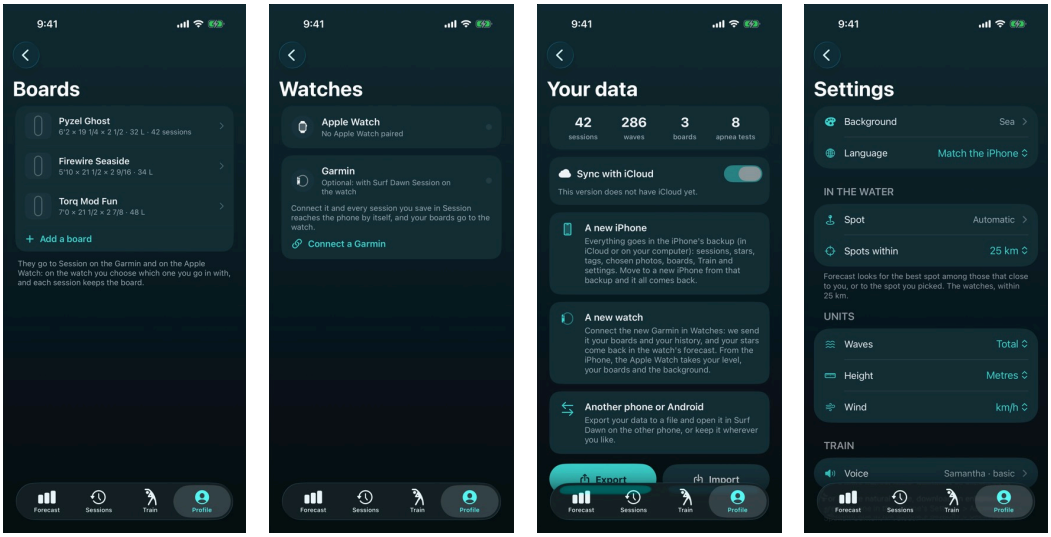
- **Apnea test:** 1:50 of calm breathing (in for 4 seconds, out for 6), 10 seconds for one deep breath in, and hold. When you feel the **first contraction** (the diaphragm pushing to breathe), mark it: what comes before is the easy part, what comes after the struggle. Over time the easy part grows. The result is compared with your best and your last 8 tests, and it offers to set the CO2 table to half the test. The iPhone doesn't measure heart rate or SpO2 (the Garmin does).
- **CO2 table:** short holds with rests that get shorter; it trains bearing the CO2, what you feel in a long hold-down.
- **O2 table:** holds that grow up to near your best, with 2 minutes of breathing between them; it trains bearing little oxygen. It needs a test first.
- **At the end of a table,** "How was it?": **Easy**, **Fine** or **Hard**. The next one adjusts to what you say.

The voice is the best one installed for the app's language. You choose it in Profile → Settings → **Voice**: **Automatic** or any of the installed ones (tap one to hear it). For a more natural voice, download an enhanced or premium one in the iPhone's Settings → Accessibility → Spoken Content → Voices; apps can't use Siri's voices.

Profile



- **Your surfing,** at the top (see below).
- **Your numbers in a row:** sessions, waves, hours in the water and spots, each with its last 12 months as small bars (the last one, this month). Tap it to open Your numbers.
- **Your records:** the longest wave, most waves in a session, the fastest and the longest session, with where and when, each against your typical session: the bar is the record and the mark, the mean of your sessions ("in a typical session: 11 s").
- **Your spots:** how many sessions you've done at each one and your stars there.
- **At the bottom:** Boards, Watches, Your data, Support Surf Dawn, How to read the colours and Settings.



Your surfing

What Session uses: it goes to your watches too.

- **Stance:** goofy (right foot forward) or regular (left foot forward). With your stance, each wave comes out frontside or backside, and Pre-surf's pop-up faces your way.
- **Level:** beginner (white water, small waves), intermediate (green waves) or advanced (fast waves, turns). With your level, Session picks how it detects your waves on both watches: Whitewater, Wall or Performance. In the white water it takes slower, shorter rides; on fast waves it asks for more speed, so hard paddling isn't taken for a wave. With at least 10 waves, the app suggests a level (from the top speed of your last waves) and **Use** picks it. It changes the watch's detection only when you change the level: if you then pick another one on the watch, that one stays.
- **Watch on:** the left or the right wrist. With it, Session on Garmin adjusts how it measures the pop-up. The Apple Watch doesn't need it: it already knows which wrist it's on.
- **Usual board:** the one Session takes until you choose another.
- **Your photo:** tap the photo circle (here or in Profile) to choose it from the camera roll. The iPhone's photo picker doesn't ask for permission: only the photo you choose reaches the app. It stays on the iPhone.

Your stance, wrist and level go to Session on the Garmin, and your level and stance to Session on the Apple Watch, when they change on the phone: if you then choose another one on the watch, that one stays.

Your numbers

For the **Month**, the **Year** (the last 12 months) or **All**: sessions per day or per month; waves per hour, session by session (each dot is a session); your time in the water surfing, paddling and waiting; the mean wave, waves per session and the waves caught out of those attempted.

When you surf best: your stars by size, period, wind, tide and time of day when you went in (morning, midday or afternoon), and your best combination. The wind goes on the spot's rose (the sea at the top and the beach at the bottom): offshore comes in from the land, cross-shore along the beach and onshore from the sea, in green, yellow and red. The bar goes up to 5 stars; in brackets, how many sessions. Rate your sessions with stars to see it.

Boards

Each board with its photo, its model, the length, the width, the thickness and the litres (**Add a board**). They go to Session on the Garmin and on the Apple Watch, all but the photo (on the Garmin they replace the ones in the Connect IQ app): on the watch you choose which one you go in with, and each session keeps the board. The photo stays on the iPhone.

Watches

- **Apple Watch:** it says whether one is paired and whether it has Surf Dawn. There's nothing to connect: the watch sends its sessions by itself.

- **Garmin** (optional, with Surf Dawn Session on the watch): **Connect a Garmin** opens Garmin Connect, which the watch is already paired with, to choose it; if you don't have Garmin Connect, the app tells you. **Install Session on your Garmin** opens its page in the Connect IQ store (it is there while no Garmin is connected or the connected one has no Session, and also in Sessions while it is empty). Then it shows whether Forecast and Session are installed on the watch.
    - **Every session you save** on the Garmin arrives by itself, with its waves, its map, where you paddled and your stars, a few seconds after you leave Session, or when you leave Session on its Home for about 20 seconds without pressing a button (the watch stalls for a moment while it sends). If the phone isn't nearby or the app is closed, it waits on the watch (up to 60) and the watch tries again every 5 minutes for the first hour and then every half hour for a day, so it arrives a while after you open the app; otherwise, the next time you open Session, since the app asks for it every time you open it and when you go to Sessions.
    - **Ask for the history:** brings up to 60 sessions from the watch's history, with the waves of the last 10. They arrive with Session open and still on Home: the first ones after 20 seconds, then 4 every 5 seconds or so (all 60 in a couple of minutes). If you leave Session before, the rest follows the next time you open it and leave it on Home.
    - **Send yours:** sends the watch your history (with your stars, which come back in the watch's forecast), your boards and Your surfing. When you connect a new watch it does this by itself. What the watch already had stays as it was.

Without the iPhone app, Session on Garmin works the same as always.

Your data

- **A new iPhone:** everything goes in the iPhone's backup (in iCloud or on your computer): sessions, stars, tags, chosen photos, boards, Train and settings. Move to a new iPhone from that backup and it all comes back.
- **Sync with iCloud** (on by default): your sessions, with their waves and where you paddled, your boards and Train go to your iCloud and show up on your other iPhones with the same Apple Account, on a new one, or on this one if you delete the app and install it again. If you change something on two phones, the last change wins; a session deleted on one is deleted on the others too. Deleting is for good: even if another phone or the Garmin sends it again, a deleted session doesn't come back. It's encrypted with your iCloud keys: not even Apple can read your sessions. The board photos, the Profile photo and the camera roll photos you chose for each session don't travel: they stay on the phone where you added them. Neither do the heart rate and blood oxygen of your apnea tests: they stay on the iPhone and the watch, and your other iPhones get the test without them. If you have no iCloud account, sign in to iCloud in the iPhone's Settings.
- **A new watch:** connect the new Garmin in Watches: we send it your boards and your history, and your stars come back in the watch's forecast. From the iPhone, the Apple Watch takes your level and your stance (Your surfing), your boards and the background (if you chose **The same on the watches**); everything else is picked on the watch.
- **Another phone or Android: Export** saves your data to a file (sessions, boards, Train and settings) to open in Surf Dawn on the other phone or keep wherever you like; **Import** adds what's missing.

Support Surf Dawn

Surf Dawn is free, with no ads and no accounts. If it helps you catch better waves, you can buy something for the one who makes it: a coffee, a beer or a pizza, at the App Store price in your currency. It's a one-time payment with your Apple Account and it doesn't unlock anything: everything stays just as free. If someone has to approve the purchase (Ask to Buy, in Family Sharing) or your bank does, the sheet says it's pending: once approved it goes through on its own, even with the app closed.

How to read the colours

What each colour and mark of the app says, with the same drawings you see in it: the swell's thick arrow (green head-on, yellow angled, red blocked), the wind's thin arrow with feathers (green offshore, yellow cross-shore, red onshore), the wind's number (green under 20 km/h, yellow up to 30, red above: how hard it blows), a spot's rose, the energy bars with their seven colours from grey to violet (there the colour says how much sea there is, not whether it works), the day's bar, the stars, the trend's stripes, your waves on the map (rights in teal, lefts in orange, straight in white, and the take-off zone), your time in the water (surfing in teal, paddling in blue, waiting in orange, the same as on the watches) and the water's drop.

Settings

Setting	Values (factory default in bold)
Background	**Sea**, Night, Graphite, Forest or Light (phone only). Below, two switches: Match the iPhone (off by default) uses Light with the iPhone's light mode and your dark background with dark mode; The same on the watches (on by default) sends the background to the Apple Watch too. Light stays on the phone only, because on the watches a light background uses more battery
Language	**Match the iPhone**, Español, English or Português. The whole app changes at once; the Apple Watch's is chosen on the watch
Spot	the one the ranking centres on: **Automatic** (the nearest to where you are), a spot from your Saved zones or from The whole world
Spots within	how far Forecast looks for the best spot, from you or from the spot you picked: **25 km**, 50 km, 100 km or 150 km (in miles with the height in feet). Only on the phone: the watches look within 25 km
Waves	**Total** (the whole sea) or Swell (only the groundswell)
Height	**Metres** or Feet
Wind	**km/h** or Knots
Voice	**Automatic** or one of the installed voices for the language (see Train)
Manual, Website, Instagram	this manual as a PDF (in the app's language), Surf Dawn's page and its Instagram account, @surfdawn.app
Write a review	opens Surf Dawn in the App Store to write one
Privacy, Support	Surf Dawn's pages
Version	the installed version

What the system draws (the photo picker, the permission prompts, the share sheet) follows the iPhone's language, or the one you choose for Surf Dawn in the iPhone's Settings.

At the very end, under Version, the dedication with his photo: in memory of Gonzalo Moratorio, 1982-2026. Surf Dawn is free in his memory.

Frequently asked questions

Do I need a watch? No. Forecast, Train and Profile work on their own; sessions come from Session on a Garmin or on the Apple Watch.

Why does the iPhone's ranking have more spots than Today on the watch? The iPhone compares all the spots within 25 km (or what you choose in Spots within, up to 150 km and from several zones); the watches, the 12 nearest of your zone, because on Garmin the morning alert doesn't have the memory for more.

Do my Garmin sessions show up in Health? No: they stay in Garmin Connect and in the app. The Apple Watch ones do, when you save them, as a Surfing workout with its map.

A session doesn't show the waves on the satellite. The Garmin keeps where each wave was for its last 10 sessions, and Session started saving it on 27 October 2026. For the others, the app draws the waves from the take-off zone of another session at that spot, and says so.

Do the stars I change on the iPhone go back to the watch? Yes, when you send it your history (Watches → Send yours, or when you connect a new watch), and your stars come back in its forecast.

Appendix: data and models

Where each number on the watch face, in Forecast and in Session comes from, why those models, and what their limitations are.

Where each number comes from

Element	What it shows	Where it comes from
Sunrise / sunset	Next sunrise and sunset	Open-Meteo, for today and tomorrow
Battery	The watch's battery %	Green above 50 %, yellow from 20 to 50 %, red below 20 %
Stale data / no phone	Below the date (in Digital, below the battery), only when something fails	With data older than 3 h the values show **in grey** and "4 H AGO" appears in red; with no connection to the phone a **crossed-out phone** appears (in that state no updates arrive)
Water	Sea temperature	Open-Meteo's marine model (Météo-France), at the spot in use; neighbouring spots use the same
Outside	Air temperature + weather icon; the **number's colour is the UV risk** (white with no sun, green low, yellow moderate, orange high, red very high, violet extreme)	The Garmin's own weather (from the phone, the same as its weather app) when it's from the last 3 hours and less than 25 km from the spot; otherwise the Open-Meteo forecast with the zone's wind model. The model can get the sky wrong: on 26/10 GFS gave sun, 15° and UV 8 at La Plage under an overcast sky
Waves	Height (m), period (s) and direction of origin. **Swell traffic light:** the arrow and the period are green if it comes in head-on to the beach (up to 35° off), yellow if diagonal (up to 75°) and red if from the side or from behind (blocked beach)	Open-Meteo, with the wave model of the spot's zone (Models by zone): in Uruguay and Santa Catarina **NOAA GFS Wave**, the same one Windguru shows. When the model point nearest the spot falls on land (as on Florianópolis' east coast, for example), the waves are requested at a point offshore. By default it is the **total** sea (Windguru's "Wave" row); in Customize you can pick the ground **swell** only (off Uruguay the model splits the swell poorly, and in zones with ECMWF WAM there is no separate swell: the total is shown)
Wind	km/h and the compass point it comes from	Open-Meteo, with the zone's wind model; **GFS** by default (Windguru's "GFS 13 km"), from the model's cell nearest to the spot, which on the coast is usually the sea's (Open-Meteo gives a land one by default: for La Plage, one 10 km inland). The colour depends on where the beach faces: **green offshore** (up to 45° from the land wind), **yellow cross-shore** (up to 110°) and **red onshore**

Element	What it shows	Where it comes from
Tide	24 h curve with high and low tides, time and current height	The table of the **nearest port** of the zone that covers the spot. In Uruguay, the **official SOHMA table**: Montevideo (up to 26 km: Playa Honda and La Pantalla), Punta del Este (up to 60 km: from La Virgen to José Ignacio) and La Paloma (up to 135 km: all of Rocha to Chuy; east of Cabo Polonio the times can be further off, and no tide gauge confirms them), in metres above each port's datum. On the Costa de Oro, from El Pinar to Jaureguiberry, neither table resembles the tide there (smaller and almost once a day), so those spots use Open-Meteo's sea level, like the ones far from any port. In Santa Catarina, the **official DHN (Brazilian Navy) table for Imbituba** (up to 100 km: from Praia da Vila to Praia Brava), published by Epagri/CIRAM. Elsewhere, the official predictions that can be republished (**NOAA** in the US, Hawaii, Puerto Rico and the Pacific; **JMA** in Japan; **Marine Institute** in Ireland; **LINZ** in New Zealand) and, where there are none, the nearest tide gauge on the same coast (**TICON-3**) or, with no gauge nearby (Argentina, Central America, much of Indonesia, the Maldives, Africa…), NASA's global **GOT5.6** model. If the month can't be downloaded, the watch computes it from the port's constants (±4 cm in Uruguay). Far from any port, Open-Meteo's hourly sea level, which comes from a model: on top of the tide it adds the effect of air pressure, it is measured from mean sea level (it can go below zero) and it is less accurate near the coast. The curve and the current height go through each hour's height. The ports' tide is the astronomical tide: it doesn't include the wind. In Uruguay it is the small part of the level: the table rises and falls 20 to 50 cm a day, while the wind and the air pressure shift it by 20 to 30 cm on ordinary days and by more than 1 m in storms (higher in a sudestada, lower with a northerly wind). The heights are above each port's own datum, which changes from one source to another: use them to compare tides at the same port

The watch face requests data in the background every **hour**, and every **15 minutes between 5 and 10**, the first hours of surfing. The hourly forecast for the spot in use comes every three hours or when the spot changes, and with it the water temperature, the sea level (away from a port) and the nearby spots, to switch spots at once. If part of a request fails, the last values of that part are kept. Values turn grey after 3 h without new data ("N H AGO", and "N D AGO" from 48 h).

Which spot the watch face uses

- **Spot:** the one you pinned on the watch or in Forecast; if there is none, the nearest one within **25 km** among the zones saved on the watch; if there is none, the backup spot in the phone settings (La Plage by default). The face doesn't turn on GPS: it uses the watch's last position, from its last GPS or, without a GPS activity, the one the phone passes on, which can

be several kilometres off (in Punta del Este it was 19 km away). Opening Session until the GPS turns green fixes it. If you travelled more than 50 km, the phone's weather position counts too. The spot is checked every 10 minutes.

- **Zones:** spots come in zones of up to 60, from the public data repo. Uruguay's come with the apps; the others (Santa Catarina included) download on their own when you get there, 2 or 3 KB each. Each app keeps up to 10 zones besides the built-in ones; when there is no room, it removes the auto-downloaded one you used least (never one you downloaded by hand). What is saved on the watch never gets it stuck: when space runs out, old zones, saved tides and old forecasts go first. Session's history is never deleted to make room for something else. A zone that changed in the repo is downloaded again at most once a week.
- **Preloaded spots:** every update also brings the spots of the same zone within 25 km (up to 8), so switching to one next door is instant. A faraway spot picked by hand waits for the next background update: Garmin allows one every 5 minutes, and meanwhile the face says LOADING.
- **Orientation:** each spot knows where its beach faces, computed from the OpenStreetMap coastline. It decides the swell and wind colours.

Forecast and Session data

Both apps request the data themselves when they open (Forecast also with START or when you pick a spot), without waiting for the background: the waves and wind of the zone's models hour by hour, air and sun from the wind model, water from the marine model and the same tide as the face. The last forecast is kept for three hours: opening again in that time asks for nothing. Periods and temperatures are rounded like Windguru (9.55 s → 10 s). After 19:00 the forecast starts tomorrow. All the hours are the spot's, also with the watch in another time zone.

Models by zone

Each zone brings its wave and wind models, chosen in the data repo:

- **Uruguay, Santa Catarina and Argentina: GFS Wave + GFS**, like Windguru, the reference for people who surf there (see below).
- **Everywhere else:** GFS Wave and GFS by default. Where there are buoys, the data repo compares Open-Meteo's models against them every month (NDBC and CDIP in the US, IMOS/AODN in Australia and the Marine Institute in Ireland) and the zone switches models when another one is clearly less wrong. Only models that give the **peak period**, the one the watch shows, are chosen: GFS Wave or **ECMWF WAM** (which gives the total sea, with no separate swell). In the October 2026 validation ECMWF WAM won on the US west coast, Hawaii, Baja California, the Gulf of Mexico, the US northeast, British Columbia, South Australia, Northern Ireland and Clare/Kerry, with 5 to 60 % less height error than GFS Wave (20 to 45 % in most; half in Hawaii and Los Angeles). For wind, ECMWF IFS won in the US southeast and GEM (Canada) in Puerto Rico; elsewhere GFS stays.

Uruguay: why GFS Wave + GFS

On 2026-10-07 Open-Meteo's models were compared with what Windguru shows for Punta del Este (Parada 31). Windguru's waves are **GFS-Wave 25 km** (NOAA) and its wind is **GFS 13 km**. In Open-Meteo, GFS Wave gave practically the same (for example 2.06 m / 9.6 s against 2.1 m / 10 s), while the default model (Météo-France) gave 0.3 to 0.4 m less and 2 to 3 s less period, and its wind was off by up to 5 knots; GFS matched. That is why the apps ask for those two models. Tide and water temperature don't exist in GFS Wave and come from the default model.

Spot positions and orientation: derived from the © OpenStreetMap contributors coastline (ODbL). Tides outside Uruguay and Brazil: NOAA/NOS/CO-OPS (public domain), JMA (Public Data License 1.0), Marine Institute (CC BY 4.0), LINZ (CC BY 4.0, Crown copyright), TICON-3 (Hart-Davis et al. 2022, CC BY 4.0, GESLA-3 data) and GOT5.6 (R. Ray, NASA GSFC, public domain). Forecast: Open-Meteo (CC BY 4.0).

The best hours (Forecast)

Each daylight hour gets a score from 0 to 1:

- **Waves:** 65 % for height (0 at 0.3 m, full at 1.8 m) plus 35 % for period (0 at 5 s, full at 13 s), on the world's scale. Each zone has its own, from a year of waves at its wave point (GFS Wave, November 2024 to October 2025, 7 to 18 h): full at 88 % of the height exceeded 10 % of the hours and at 1.7 s more than the period exceeded 10 % of the hours, and the bottom ends

in the same proportion. Rocha's (2.04 m and 11.3 s) is the world's. The period counts by the height: in full from 0.45 m, half at 0.3 m and nothing up to 0.15 m (on the zone's scale); before, it counted on its own, and 10 cm at 15 s scored as much as 1 m at 6 s.

- **Wind:** it doesn't subtract up to a speed that depends on the direction: 35 km/h up to 20° off offshore, 12 at 80° (cross-shore) and 8 from 140° (onshore), in a straight line between those angles. Above it, the score drops until it is 15 % at three times that limit. It is the mean wind: the gusts don't count; the iPhone app shows them in each spot's day when they beat the wind by 10 knots or more (the watches don't).
- **Swell exposure:** full head-on (up to 15° off), three quarters at 55° (diagonal), a third at 100° (blocked) and nothing from 135° (from behind the beach: that sea doesn't head to the shore), in a straight line in between. Without the orientation or the direction, a third. At 173 reefs and points the swell wraps into, the angle is measured from their **swell window** (where the swell that works them comes from: the mean direction of their zone's model over a year of waves, checked against surf guides), without the shelter's cut and with a third from 100° (what wraps in from elsewhere doesn't come from behind the beach); the wind still goes by the coast's orientation.
- **The energy that reaches the beach:** 1.96 × height^2 × period^2 of the sea that counts in the score, times the swell exposure squared (the exposure is the height's, and the energy goes with the height squared): all of it head-on, 56 % at 55°, 12 % at 100° or with land in the way, nothing from behind the beach. It's surf-forecast's formula for one swell (twice the physical energy of an irregular sea of that height, and with the period weighing twice what it does in how hard the waves break), with the height and the period of a single sea: it doesn't add up the chop and the swells separately, and neither does surf-forecast.
- **Spot shelter:** for each spot, in 18 directions, whether there is land within 2 km, within 25 km or open sea (from the OpenStreetMap coastline). Wind that crosses land close by counts no worse than halfway between offshore and cross-shore (within 25 km, than cross-shore): over so little water it raises almost no chop. Swell with land in the way is worth at most a third (within 25 km, three quarters). A spot with no known orientation counts as blocked and onshore.
- **The other swell:** of the two biggest swells GFS Wave splits out, the bigger one that comes from 30° or more away from the page's waves and is at least 0.3 m on the zone's scale (0.43 m in Peniche, 0.17 m in Italy; below that only its period added up, with 10 or 20 cm). Each hour is worth what the one that comes in better at the beach is worth, the page's waves or the other swell, and the traffic light goes by that one. It is drawn only where it matters: where it is the one that counts or brings at least half the energy of the page's waves (height^2 × period^2): in 4 % of the hours of a month in 29 zones, against 30 % if it were always drawn. Over a month (28/09 to 30/10/2026), in the Uruguay zones it improved the traffic light in 2.8 % of the daylight hours and changed the alert's best spot on 2 of 102 days; in 26 GFS Wave zones in the rest of the world, on 12 of 884 days (9 at Jeffreys Bay). Adding the third swell changed the best spot on a single day of those 884. ECMWF WAM doesn't split the swell out: its zones have no other swell.
- **The wind chop that goes away:** where the total sea is one of the two swells' (it comes from its side, within 30°, and has its period, within 0.6 s) and the wind blows from 30° or more away from it and from the land (90° or more off the way the beach faces), the score and the energy count the sea without the chop: what is left of the total sea's height^2 once the two swells are taken out. With an offshore wind the chop heads out to sea and never reaches the beach; with an onshore one it comes in and counts. At La Aguada on 5 November 2026 at 12 h, 0.73 m were left of 1.14 m; on 7 October at 7 h, with an onshore wind, the 1.04 m stay whole (before, 0.40 m and FLAT). The energy is that of the sea that counts in the score: the other swell if it comes in better. It comes from what the app already asks for; the Olas y viento field, without the swells, keeps the whole sea.

The band marks the 3 consecutive hours with the best average, all in daylight (from the sunrise hour, or the next one if the sun rises at half past or later, to the sunset hour), and only if that average is above 0.1. Today it can fall on hours that have already passed.

The tide isn't in the score, so it isn't in the band, the morning alert, Today or the complications either: the page shows the curve, and it's up to you to see whether the best hours fall on the tide that suits the spot. Session's stars do weigh it.

Usually (What's coming)

What's coming, on the iPhone, compares the days with surf coming with the usual ones. A day has surf when the zone's best spot has 3 stars or more in its best window, with the same calculation as Forecast's ranking. Usually comes from each day from 2016 to 2024 in Open-Meteo's history: the waves of ERA5-Ocean (with the peak period, which it has until November 2024) at the wave point most of the zone's spots share, and the wind of ERA5. ERA5's heights aren't those of the forecast's model, so they're multiplied by the ratio between the two over the last three months (0.87 at Maldonado). Each month keeps the median of the years, and the top and bottom quarters: more days than the top quarter's is **better than usual**, fewer than the bottom quarter's is **worse than usual**. **The water and the air** on those dates are compared the same way: each month's mean of each year, and the

middle half of the years. The air is ERA5's high and low from 2016 to 2024 at the same spot, and since ERA5's cell at a beach is often the land's a few kilometres in (warmer by day, colder at night), they're shifted by what the zone's wind model gave above or below it over the last three months (at Maldonado, 2.3° less at the high and 1.4° more at the low). The water is the sea temperature Open-Meteo's forecast gives, the same as on a spot's page: ERA5 doesn't have it in Open-Meteo, and that history starts in 2023, so the water's usual comes from 2023 to 2025. The usual wetsuit comes from that water and that low, with the same rule as on a spot's page. It's worked out on the Mac for every zone of the data repo, with the ERA5 waves and wind the repo downloads from Open-Meteo little by little (some 570 calls a zone, from GitHub and not from your connection). The zones the app comes with (Maldonado, Rocha and Canelones) have it inside the app, and the iPhone downloads every zone's from the data repo once a week (some 50 KB from GitHub: it uses no Open-Meteo requests). A new zone has it a few days after it's added; meanwhile What's coming shows its days without comparing them.

The weather map (iPhone)

The iPhone's weather map shows the sea of the whole region, not one spot, and asks Open-Meteo for nothing:

- **The waves** are those of **Copernicus Marine**'s global wave model (the European Union): cells of 1/12° (about 9 km), every 3 hours, up to 10 days. They're drawn in Surf Dawn's colours, and the total height, the biggest swell, the wind sea and the period come from there. Near the coast the model is coarse: it's for seeing the swell that's coming, not the wave of one beach (that's what the spot's page is for). Attribution: *Generated using E.U. Copernicus Marine Service Information*, doi.org/10.48670/moi-00017.
- **The wind** is **GFS**'s (NOAA) at 10 m, the same model as the spots' wind in Uruguay, every 3 hours up to 5 days (Your coast, hour by hour, interpolates between them). The data repo downloads it every 6 hours and the iPhone brings only the piece of its area (about 140 KB at a time).
- **A year ago:** Copernicus's waves are there since November 2022 at any hour; the wind is kept by the data repo once a day, each place at its midday (the last 400 days; the first year was filled from NOAA's GFS archive).
- **The spots' colours** in Your coast, hour by hour, are those of each spot's wind on its page (green offshore, yellow cross, red onshore), not the grid's.

The stars (Session)

For each forecast hour, Session looks for your rated sessions (1 to 5) **at the same spot** with similar conditions: height, period, how far the swell is off the beach, wind and its direction, tide (and whether it is rising or falling) and time of day. The more a session resembles it, the more it weighs; with the tide in the other phase it weighs half. The stars are the average of your ratings with those weights, and "N sessions" counts the ones that really resemble it.

- **History + estimate:** with fewer than 3 similar sessions, it adds the forecast's estimate (the best-hours score, in stars) as if it were one and a half sessions.
- **History only:** with no similar sessions, it shows no stars.
- **Best window:** the two consecutive hours between 6:00 and 20:00 with the most stars; worked out when each session is saved.

Recommended wetsuit (Session)

The forecast water temperature for the hour, colder by a third of how far the air with the wind (the Environment Canada and NWS wind chill, never above the air) feels below it, at most 3 °C: that picks the thickness and the hood; boots (under 15 °C) and gloves (under 13 °C) go by the water alone. The cut-offs (table in The recommended wetsuit) come from the guides by Rip Curl, Vissla, evo and Sendy, which agree on the order (4/3, then booties, then gloves and hood) and differ by one or two degrees between brands.

Wave detection (Session)

How it counts waves, attempts and strokes is in How waves are counted.

Pop-up (Session)

It isn't shown since 6/11/2026 (The pop-up): the rule below, written before having real take-offs to tune it with, found no pop-up on the 24 waves of the four sessions recorded in Calibrate. Before the push the wrist is never still: in the 0.24 s before it, it turns at 100 °/s in half of the cases (73 to 140 between the 10th and the 90th percentile), against the 60 °/s the rule asks for, because with the hands on the board the elbow straightens and the forearm turns, and the board pitches as it drops down the wave. Session keeps working it out on Garmin and on the Apple Watch and saves it with each wave, to redo it once there are filmed take-offs. When Session confirms a wave, it looks at how the wrist moved from 6 s before to 6 s after the moment it started, with the accelerometer and the gyroscope, 25 times a second:

1. **The push:** a stretch with the wrist rotating faster than 152 °/s, with the accelerometer deviating at least 0.5 g, up or down, around it (the arms leave the board). It can be from 4 s before to 3 s after the start of the wave.
2. **Still hands before:** right before the push (at most 0.2 s of rise), the wrist below 60 °/s (for about 0.28 s or more). The pop-up starts where that stillness starts, that is, where the last stroke ended.
3. **A stroke in the preceding second** (over 120 °/s): if you weren't paddling it isn't a take-off.
4. **Standing:** after the push peak, the first moment the wrist stays under 100 °/s for 0.32 s. That is where the pop-up ends.
5. Between 0.32 s and 3 s; if more than one push qualifies, the strongest.

Without a gyroscope, or if the pause of the hands doesn't show up, there is no pop-up (0 in the FIT's lap). The thresholds come from the expected movement, not from wrist measurements.

What the studies say (all on land, with a force platform; there are no confirmed published numbers for in the water, nor for beginners):

Who	From → to	Time	Source
Competitive surfers, men (9)	chest lifts off → front foot lands	0.56 ± 0.06 s	Parsonage et al. 2018
Competitive surfers, women (8)	Same	0.68 ± 0.07 s	Same
Experienced recreational surfers (23 men)	hands touch the board → weight stable	1.20 ± 0.19 s	Borgonovo-Santos et al. 2021
Intermediates, ~25 years old	Same	1.12 ± 0.16 s	Enticott 2024 (thesis)
Intermediates, ~52 years old	Same	2.03 ± 0.52 s	Same

The watch measures the second kind (from hands on the board to being stable), which includes the landing. Borgonovo-Santos splits it into pushing with the hands on the board 0.71 ± 0.08 s, transition ~0 s and from landing to being stable 0.48 ± 0.22 s. No study publishes what the pop-up looks like at the wrist (g or °/s): those that use body-worn sensors put them on the back, the sacrum or the legs.