



LONGVIEW

TIMBER CRUISE & TIMBERLAND APPRAISAL

User's Guide

Beta edition — covers Longview Desktop (Mac & Windows) and Longview Field (Android)

Part 1 — Welcome

Longview is a timber-cruising system built by foresters, for foresters. It comes as two apps that work as a pair:

- **Longview Desktop** — runs on your Mac or Windows computer. It holds your projects, calculates volumes, builds reports, and brings in data from the field.
- **Longview Field** — runs on your Android mobile device. It collects cruise data in the woods, completely offline, and computes volumes and statistics as you go. An iOS version is planned.

Everything runs on your own equipment. There is no account to create, no cloud service to subscribe to, and no signal needed in the field. Your cruise data stays on your devices unless you choose to share it.

Longview is built with compatibility in mind. Your archived cruises aren't stranded: SA08 backup files open directly — each one becomes a Longview project in seconds, with the original file untouched — and Longview writes the same format back out. Support for additional data formats is on the way. Part 4 covers the details.

Longview is under active development — more GIS capability, expanded reporting, and additional sampling methods are planned.

Two ways to cruise: Merch and Inventory

One choice shapes the whole cruise, and you make it when you create a project by picking a **collection template**. The field screens then reshape to match.

- **Merch Cruise** — designed for collecting detailed sorts and grades. The cruiser bucks each tree into logs in the field, and volume is built from those logs. Ideal for appraisals and timber sales.
- **Inventory Cruise** — designed for collecting inventory data for long-term planning and growth modeling. The cruiser records what the tree is — species, diameter, total height, and a form (taper) point — and the office builds the logs. Faster in the field, consistent across a crew, and the natural input for stand analysis and Growth & Yield.

Both expand to the acre the same way and reconcile against the same scaling engine; they differ only in how each tree's volume is built. Some offices run both, on different jobs.

How to read this guide. The two field chapters are self-contained:

- **Part 2 — Longview Field: the Merch cruise.**
- **Part 3 — Longview Field: the Inventory cruise.**

Parts 4 through 7 — the desktop app, Growth & Yield, the cruise methods and the math, and care & feeding — are shared, and serve both modes. Read your field chapter, then the rest once.

How the two apps work together

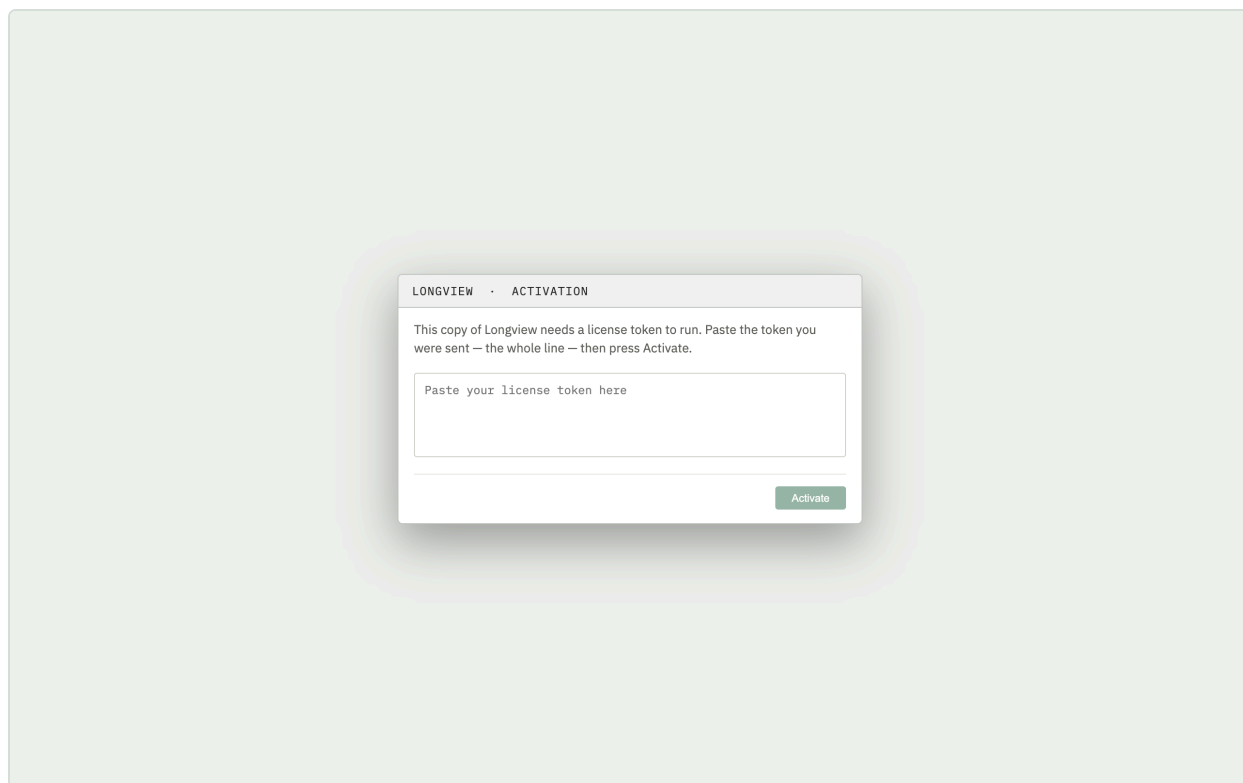
Whichever mode you cruise, the rhythm is the same:

- 1. Set up types and collect plots on the mobile device — or key data straight into the desktop.
- 2. Send the cruise file (a small **.osfield** file) from the mobile device to your computer — by cable, email, or any file-sharing method you already use.
- 3. Open it with the desktop app. Longview creates a project, and you review, edit, and run reports.
- 4. Go back for more field work later? Send a new cruise file and Longview merges the new data into the same project — nothing is overwritten without your say-so. (This is the “Day 2” workflow, covered in Part 4.)

Installing and activating

Desktop (Mac or Windows)

Run the installer you were sent (a **.dmg** on Mac, a **Setup .exe** on Windows). The first time Longview opens, it asks for a license token — the single long line of text you received with your download. Paste the whole line and press Activate. That’s it; the license lives on your computer and does not need an internet connection.



First launch: paste your license token and press Activate.

Mobile device (Android)

Longview Field installs directly from the app file (.apk) during the beta — it is not on the Play Store yet. Download the file on your device, tap it, allow the install when Android asks, and open the gold-tree icon. No license is needed on the mobile device.

System requirements

Desktop — Mac	macOS 12 Monterey or later, Apple Silicon (M1 or newer), 4 GB RAM, ~500 MB free disk
Desktop — Windows	Windows 10 or 11 (64-bit), 4 GB RAM, ~500 MB free disk
Mobile — Android	Android 5.1 or later, ~50 MB plus room for cruise data
Internet	Not required — both apps run fully offline

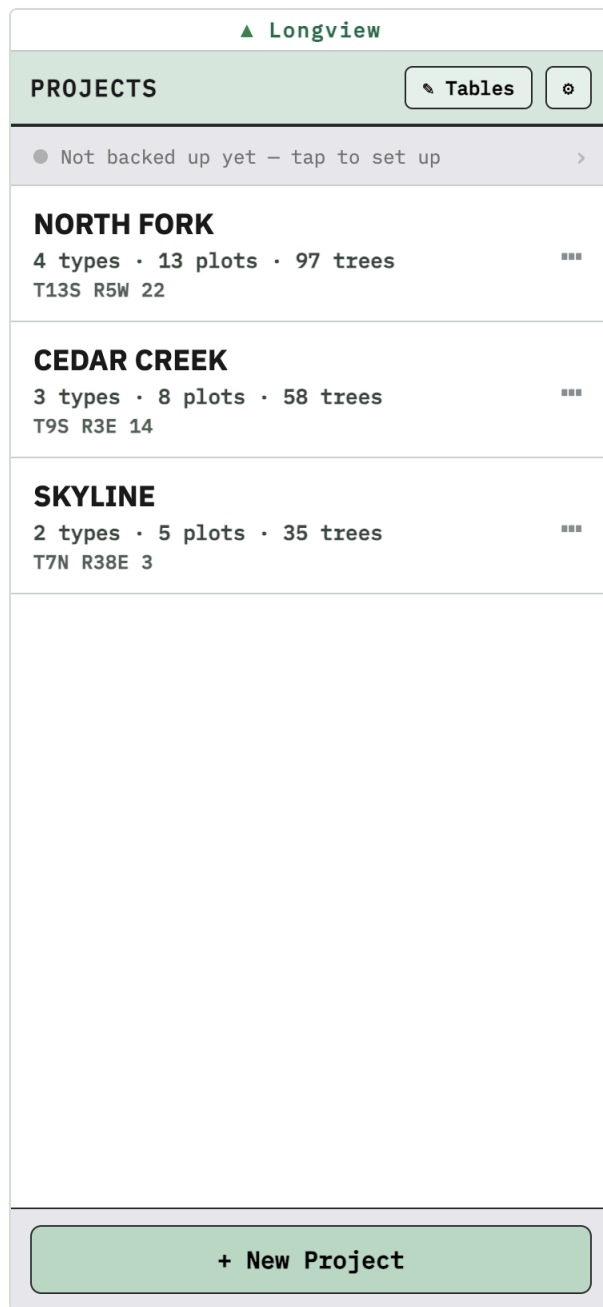
Part 2 — Longview Field: the Merch cruise

This chapter is the whole field workflow for a **Merch cruise** — the one where you buck each tree into logs in the woods. Everything you need on the mobile device is here, start to finish. (Doing an inventory instead? Skip to Part 3.)

Longview Field is built for one job: getting a full, correct cruise into the record with as few taps as possible, in rain, in gloves, with no signal. Everything below happens on the device — volumes, statistics, and tallies compute live as you enter trees.

Projects, types, and plots

Data is organized the way you already think about it: a **project** (the job) holds **types** (the stands you're cruising) which hold **plots** which hold **trees**.



The home screen: your projects, backup status at the top, Tables and Settings in the header.

▲ Longview	
◀ Projects	NORTH FORK
ELK RIDGE	4 types · 13 plots
Type 001A 120 ac · 5 plots · 31 trees T13S R5W 22 · MAT	
Type 002B 84 ac · 3 plots · 28 trees T13S R5W 22 · MAT	
Type 003C 60 ac · 2 plots · 15 trees T13S R5W 22 · MAT	
Type 004D 95 ac · 3 plots · 23 trees T13S R5W 22 · MAT	
+ New Type	

Inside a project: its types, grouped by tract, with acres, plot and tree counts at a glance.

Each type carries its own setup — tract, legal (township / range / section), acres, and cruiser initials — so a project can span multiple tracts and cruisers without confusion.

Starting from a Merch template

Every project begins from a **collection template** — a saved setup that decides which columns, species, and codes the field screens show, and how the cruise exports. For a merch cruise you pick a **merch template** (Longview ships a general one, and your office can build templates for a specific client or job type). Pick it when you create the project and the grid, species list, and pick-lists are

already right — nothing to reconfigure in the field. Load a template the office sent you from **Tables** → **Import** (an .ostemplate file); it joins the New Project list and stays there.

Because the template also carries how the cruise *exports*, a job collected against a client’s template comes out in exactly the shape that client expects — no office rework.

Type setup: where the sampling design lives

▲ Longview

Cancel

Edit Type

Save

Tract

ELK RIDGE

Type / stand name

001A

Type acres

120

Location (this type)

Township

T13S

Range

R5W

Section

22

Cruiser (3 char)

MAT

Cruise method

Standard

Stand Table

Fixed-area plots (F1-F5)

F1

0.01

F2

F3

F4

F5

Reference plots (R1-R5)

Type setup: tract, legal, acres, cruiser — and the F, R, and S factor slots.

The type setup screen is where you define the sampling factors for the type:

- **F1–F5** — fixed-area plot sizes. Enter either acres (a value under 1) or a plot radius in feet (1 or more) — Longview understands both, and the built-in translator converts radius to acres for you.
- **R1–R5** — reforestation (regeneration) plot sizes, same acres-or-radius rule.
- **S1–S5** — percent / strip expansion multiples. Each measured tree stands for this many trees in the whole type — a 5% cruise means a factor of 20 — regardless of acreage.
- **Age classes 1–9** — the ages behind each age-class code, so a one-digit code on a tree carries a real age.

Prism BAFs do **not** live here — they are entered directly on each tree in the X column of the data entry screen, so one plot can mix BAFs and nothing is hidden in a settings screen. The **Cruise method** choice at the top (Standard or Stand Table) decides how plots in this type behave — more on Stand Table below.

The data entry screen — one grid, four views

All tree data lives in one grid; the four view tabs just change which columns face you. You never re-enter anything — switch views any time.

▲ Longview

<
P 0102 NORTH FORK 001A
=
VOICE

Tre No	X	Spc	Age	Cnt	St	DBH	FP	FF	Top	Bole Ht	Tot Ht
1	35.00	DF	1	1		8	4	88	0	55	55
2	35.00	WH	1	1		15.0	4	88	0	68	68
3	35.00	SS	1	1		22.0	4	88	0	81	81
4	35.00	RC	1	1		29.0	4	88	0	94	94
5	35.00	RA	1	1		36.0	4	88	0	107	107
6	35.00	PP	1	1		9.0	4	88	0	120	120
7	35.00	DF	1	1		16.0	4	88	0	58	58
8	35.00	WH	1	1		23.0	4	88	0	71	71

+

SITE

OTHER

MEAS

LOGS

1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

≡ Menu

MEAS view: tree number, X (the expansion — BAF or plot code), species, DBH, form point, form factor, and heights. The highlighted cell is the cursor; the keypad below drives everything.

- **MEAS** — the measure view: X, species, age class, count, status, DBH, form point (FP), form factor (FF), top, bole height, and total height.
- **LOGS** — log-by-log bucking: sort, grade, length, defect, plus computed top and butt diameters, board feet, and cumulative height. A live volume badge sits in the header.
- **OTHER** — optional codes and comments.
- **SITE** — site and age trees: age code, breast-height age, total age, and growth measurements.

▲ Longview

<
P 0102 NORTH FORK
BF
=
VOICE

Tre No	Spc	DBH	Bole Ht	Tot Ht	S	G	Len	F	I	%	Top	Butt	Net BF	Cum Ht
1	DF	8	55	55	D	4	--				3.3	7.7	80	39
2	WH	15.0	68	68	D	2	40				8.4	15.0	90	40
3	SS	22.0	81	81	D	2	40				14.4	22.5	290	40
4	RC	29.0	94	94	D	2	40				19.2	29.5	600	40
5	RA	36.0	107	107	D	2	40				24.2	36.8	1010	40
6	PP	9.0	120	120	D	4	--				3.1	9.0	120	79
7	DF	16.0	58	58	D	2	40				7.2	15.5	90	40
8	WH	23.0	71	71	D	2	40				13.3	23.0	240	40

+

Log
1

▶

SITE
OTHER
MEAS
LOGS

1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

AUTO FILL

4H

PU

5H

☰ Menu

LOGS view: the log columns with computed diameters and board feet, the log navigator, and the AUTO FILL bucking buttons.

Bucking in the woods — autofill and the ghost log

The merch cruise lives in the LOGS view. Most cruisers buck the same way all day: the same preferred length, the same sorts, over and over. Longview turns that pattern into buttons.

▲ Longview

< P 0102 NORTH FORK 001A = VOICE

Tre No	X	Spc	Age	Cnt	St	DBH	FP	FF	Top	Bole Ht	Tot Ht
1	35.00	DF	1	1		8	4	88	0	55	55
2	35.00	WH	1	1		15.0	4	88	0	68	68
3	35.00	SS	1	1		22.0	4	88	0	81	81

Bucking setup ×

SHATTER POINT – FT OF LOG

none

suggestions count to the bole top

SORT LEN

HW8-9 (D) ▼

40 ×

PULP (9) ▼

40 ×

HW6-7 (C) ▼

40 ×

+ Add button

Each button is named by its sort. A tap fills the sort and length – you enter the grade by hand on each log.

Done

.
0
--
N
P
R

◀
DEL
▶
V
X
Z

≡ Menu

Bucking setup: your autofill buttons (named by sort, each with a preferred length) and the shatter point.

Set up your buttons once — each is a sort from your active sort/grade table plus your preferred log length. In the LOGS view, one tap fills the current log's sort and length, and Longview computes the diameters and board feet instantly. Enter the grade by hand on each log — that stays a cruiser's call.

The **shatter point** is for country where tops break: set a height, and autofill assumes the usable stem ends there instead of at the top of the bole.

As you work up the stem, Longview shows a **ghost length** on the final log — the feet remaining to the top of the bole (or to your shatter point), in gray italics. It's a suggestion, not an entry: type it (or

any other length) to make it stick. No more mental arithmetic for the runt log.

▲ Longview

< P 0102 NORTH FORK BF ☰ VOICE

Tre No	Spc	DBH	Bole Ht	Tot Ht	S	G	Len	F	I	%	Top	Butt	Net BF	Cum Ht
1	DF	8.0	55	55										39
2	WH	15.0	68	68										59
3	SS	22.0	81	81										74
4	RC	29.0	94	94	D	4	--				3.0	5.1	10	85
5	RA	36.0	107	107	D	4	--				3.0	10.1	30	97
6	PP	9.0	120	120										79
7	DF	16.0	58	58										50
8	WH	23.0	71	71										64
9	DF	24.0	92	98			12							80

+
◀ Log 3 ▶
SITE OTHER MEAS LOGS

1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

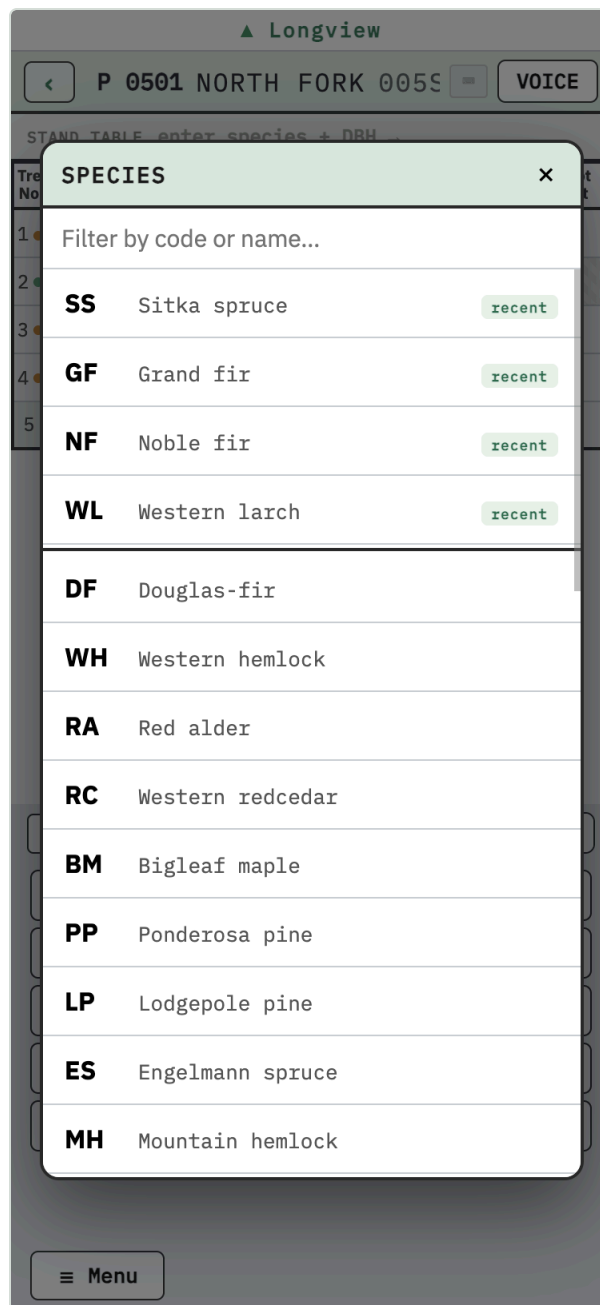
AUTO FILL
4H PU 5H

☰ Menu

The ghost log: two 40s are bucked on a 92-foot bole, and the last log ghosts “12” — the remainder — until you commit it.

The X column — how a merch tree becomes per-acre numbers

The **X column** is the heart of how Longview expands trees to per-acre values. Every tree carries its own expansion: a prism tree carries its BAF (35.00 in the screenshots), a fixed-plot tree carries its plot code (F1), a strip tree its S code, and a stand-table tally its 00. New trees inherit the previous tree’s X and species automatically, so in practice you rarely touch it — but when you nest a small-tree plot inside a prism cruise, or change BAF mid-stand, you just type it on the tree. Nothing is locked away in a master screen.



Tap the species cell for the full picker — recent species float to the top. The letter keys work too.

Two heights, two jobs: bole (merchantable) height bounds today's log volume; total height, to the tip, is what the Growth module reads. If a cruise will be grown, record total height to the tip — a merchantable-top height entered as total shortens the tree and skews both its volume and its projection. Part 6 covers the volume and expansion math in full.

The Stand Table method — tally fast, measure smart

For a 100% cruise or a heavy tally, Longview has a dedicated **Stand Table** method — choose it when you create the type.

▲ Longview

Cancel

New Type

Save

Location (this type)

Township

T13S

Range

R5W

Section

22

Cruiser (3 char)

MAT

Cruise method

Standard

Stand Table

Diameter class

2 inch

Measure 1 of every

5

Tally by species & diameter; the app measures the first of each class, then 1 of every 5.

Age classes (1-9)

1	2	3
4	5	6
7	8	9

Creating a Stand Table type: pick the cruise method right on the type setup.

On a stand-table plot, entry is stripped to what a tally needs: **species and diameter**. The header shows the diameter class you're on, and the grid locks the measurement columns so a tally stays a tally — no accidental half-measured trees. When you want a measured sample tree, press **Force measure** and the full grid opens for that tree.

▲ Longview

< P 0501 NORTH FORK 0055
VOICE

STAND TABLE CLASS 12" • MEASURE Force measure

Tre No	X	Spc	Age	Cnt	St	DBH	FP	FF	Top	Bole Ht	Tot Ht
1	00	DF	1			12	4				
2	00	DF	1			12.0	4				
3	00	DF	1			16.0	4				
4	00	DF	1			20.0	4				
5	00	WH	1			12.0	4				
6	00	WH	1			16.0	4				
7	00	WH	1			24.0	4				
8	00	DF	1			24.0	4				

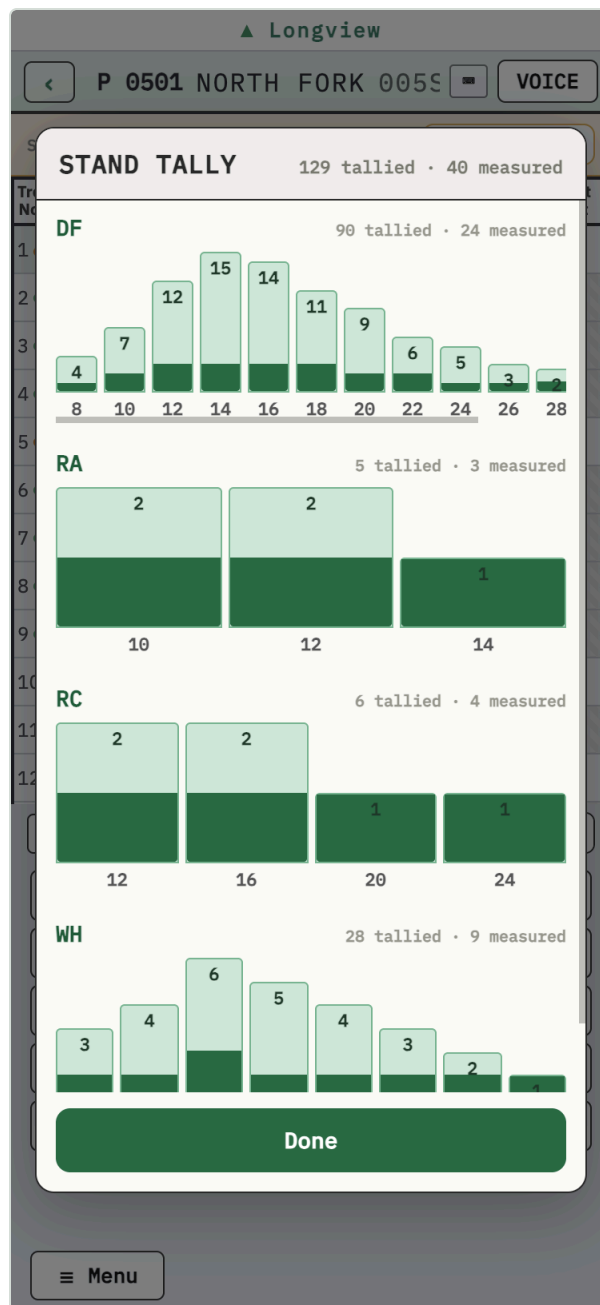
+

SITE
OTHER
MEAS
LOGS

1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

≡ Menu

Tallying: species + DBH per line, X shows the stand-table code (00).



The Stand tally view after a day's tallying: each species' diameter distribution, counts in the bars, the darker slice showing how much of each class is fully measured — and the tallied · measured ratio up top.

Two things make Longview's stand-table cruising unusual:

- **It watches your sample ratio for you.** The tally view header shows tallied vs. measured counts — overall and per species — so you can see at a glance whether your measured sample is keeping up with your tally, before you leave the unit.
- **It expands by each tree's actual diameter.** When the stand table is applied to the measured sample, Longview uses every tally tree's real recorded diameter — it does not snap trees to the middle of a diameter bin. Two 12.4" trees and a 13.8" tree count as exactly that, which keeps basal area and volume honest instead of drifting with the bin width.

Voice mode

▲ Longview

< P 0102 NORTH FORK 00 ▢
• VOICE

Tre No	X	Spc	Age	Cnt	St	DBH	FP	FF	Top	Bole Ht	Tot Ht
1	35.00	DF	1	1		8	4	88	0	55	55
2	35.00	WH	1	1		15.0	4	88	0	68	68
3	35.00	SS	1	1		22.0	4	88	0	81	81
4	35.00	RC	1	1		29.0	4	88	0	94	94
5	35.00	RA	1	1		36.0	4	88	0	107	107
6	35.00	PP	1	1		9.0	4	88	0	120	120
7	35.00	DF	1	1		16.0	4	88	0	58	58
8	35.00	WH	1	1		23.0	4	88	0	71	71

+

SITE
OTHER
MEAS
LOGS

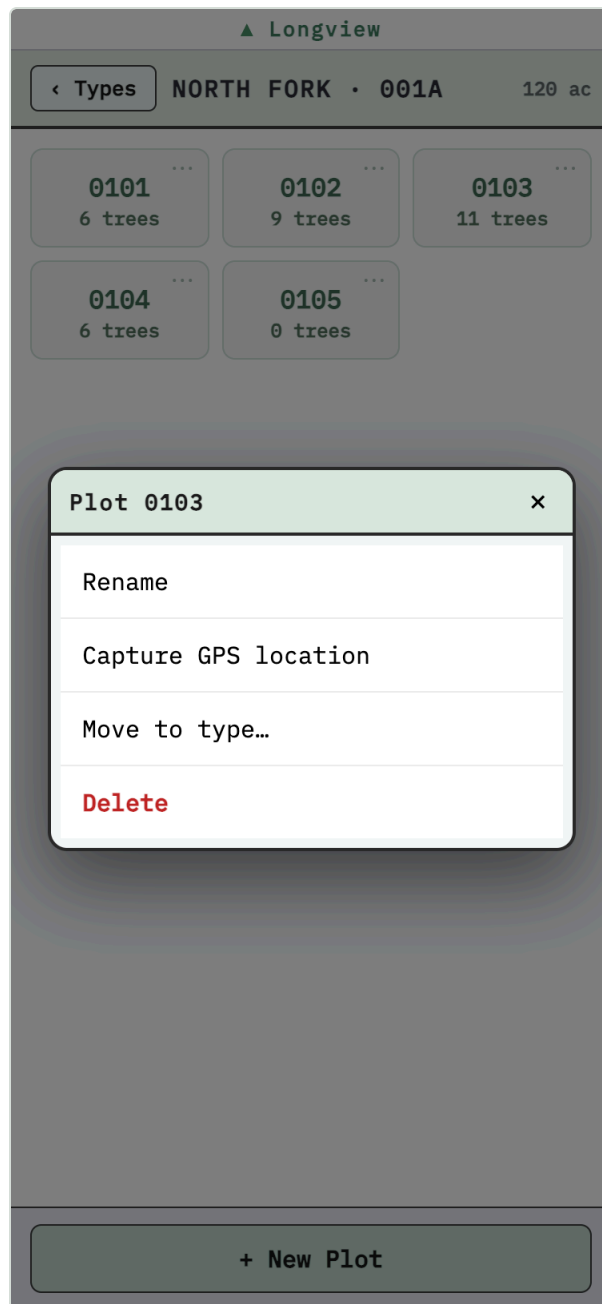
1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

≡ Menu

Voice armed: the VOICE button lights and Longview listens for values, hands-free.

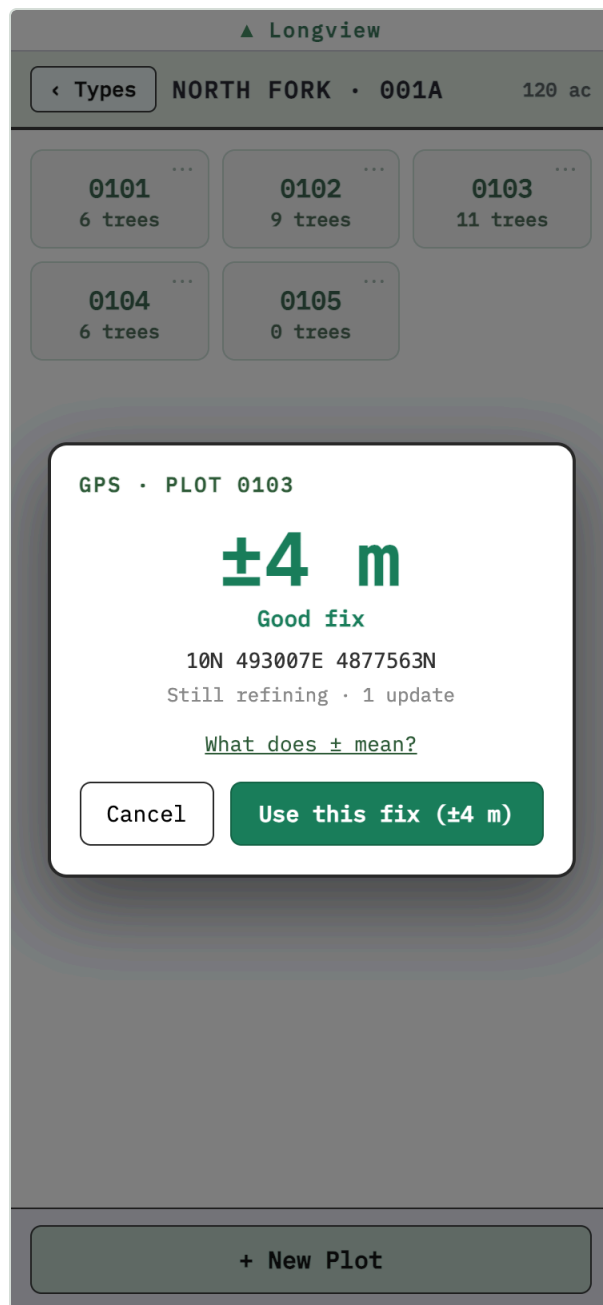
Tap VOICE and call your measurements instead of tapping them — the cursor advances just as if you'd typed, with a confirmation beep. It shines when one person is running a relascope and a notebook at the same time. Voice settings (in the entry Menu) let you tune how it listens.

Plot tools: GPS, moving, renaming



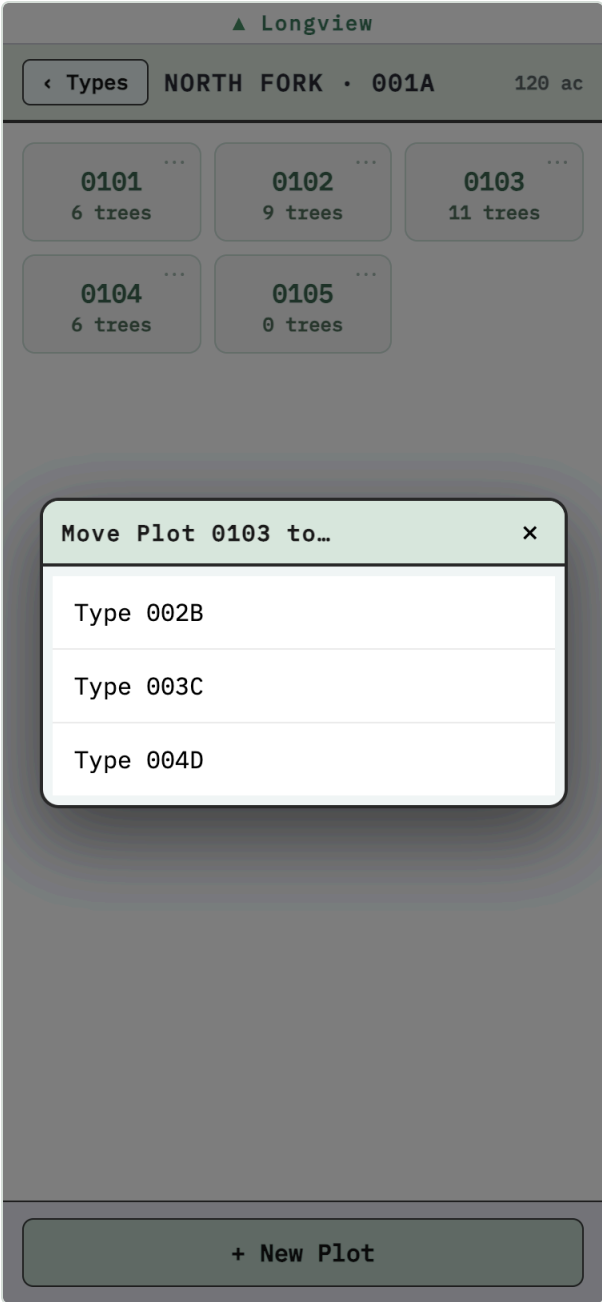
The plot menu: rename, capture GPS, move to another type, or delete.

GPS at the plot. Capture the plot center from the plot menu. Longview shows the fix quality plainly — the $\pm$ accuracy in meters and a plain-words rating — and keeps refining while you watch. Take the fix when you're happy with it; the coordinates ride along with the plot and export later as mapping files (Part 4).



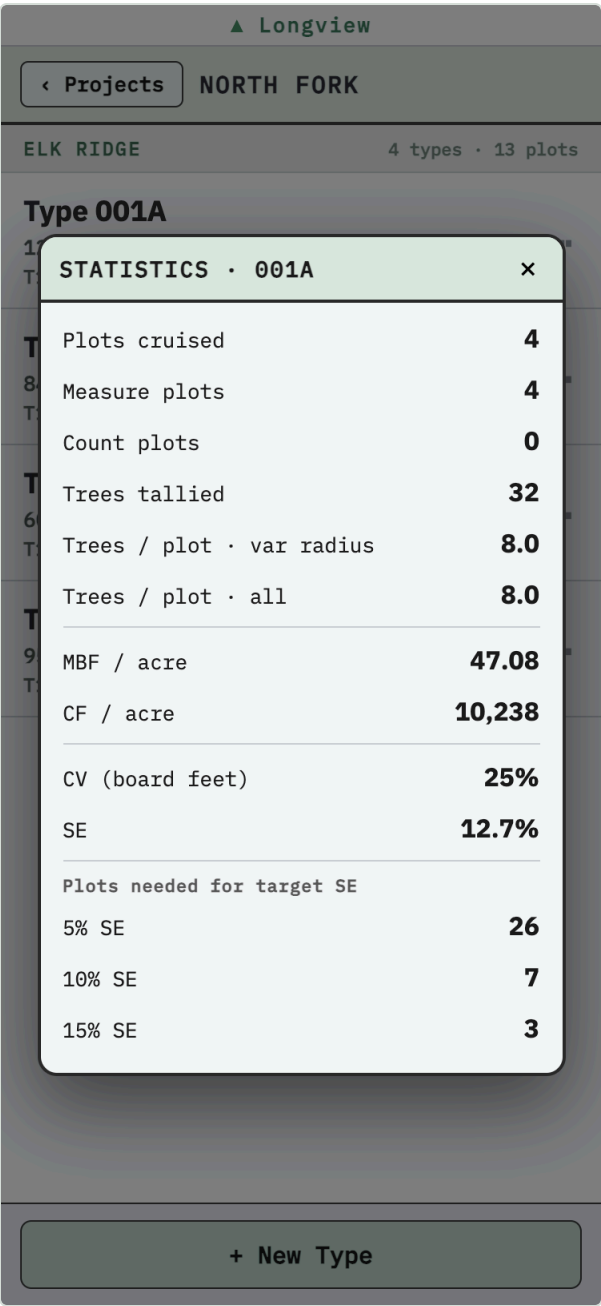
A GPS fix: accuracy, quality, and coordinates — take it when it's good enough.

Moving a plot. Dropped a plot in the wrong type, or re-typed the stand after walking it? Move the plot — trees and all — to another type in the project. No re-entry, no copy-paste.



Move a plot to any other type in the project — the trees travel with it.

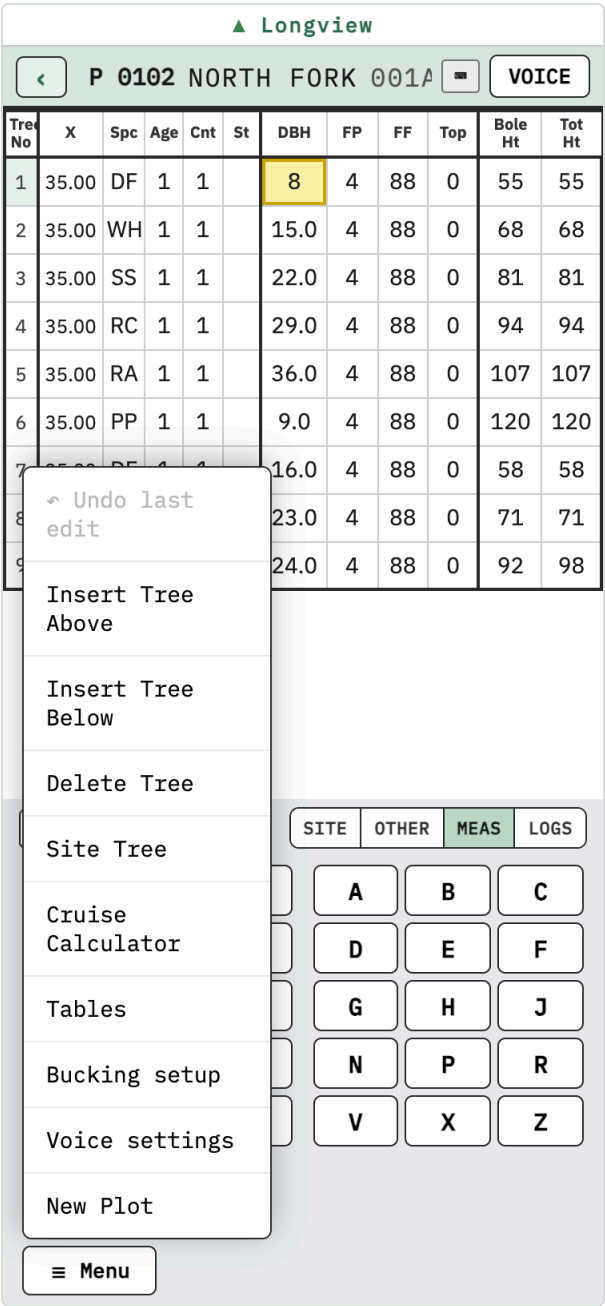
Live statistics in the field



Per-type statistics, computed on the device: plots, trees, volumes per acre, CV, and standard error.

Open Statistics on any type and see, immediately: plots cruised, measure vs. count plots, trees tallied, trees per plot, MBF and cubic feet per acre, the coefficient of variation, and the standard error. This is the “do I have enough plots?” answer while the crew is still standing in the unit — not back at the office a day too late.

The entry menu



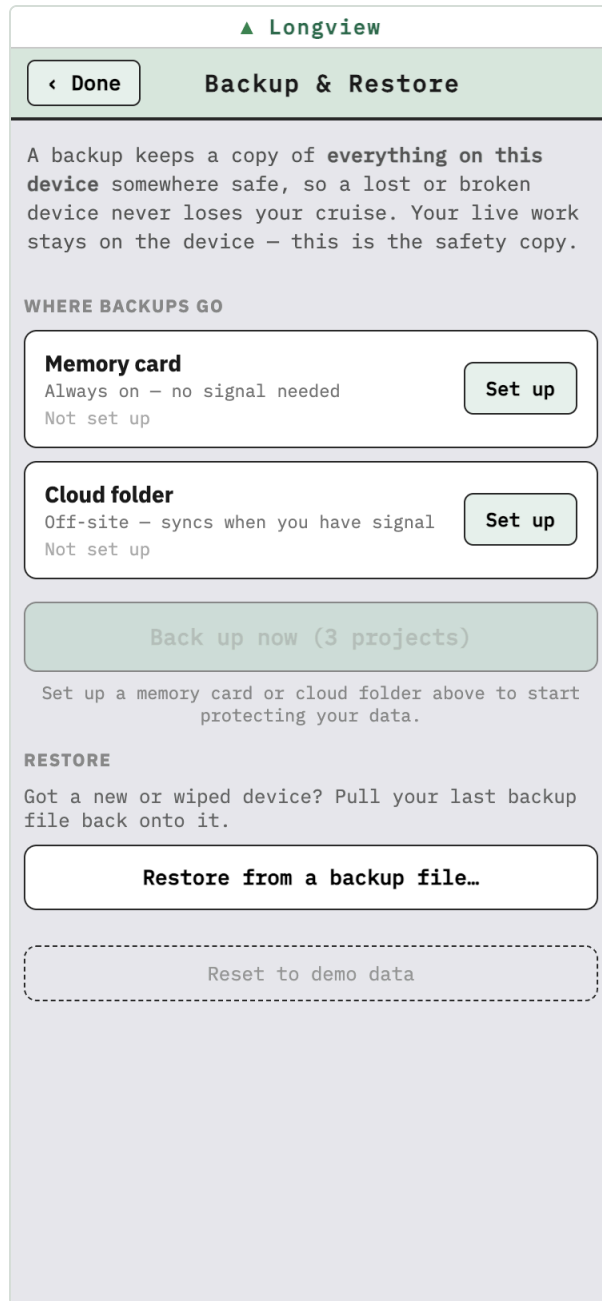
The entry menu: undo, insert or delete trees, site trees, the cruise calculator, tables, bucking and voice setup, and new plots.

Everything else lives one tap away in the entry menu: undo your last edit, insert a tree above or below the cursor, mark a site tree, open the cruise calculator, jump to tables, adjust bucking or voice settings, or start the next plot.

Backups — assume the device will die someday

Field devices get dropped, drowned, and lost. Longview’s backup design starts from that assumption: your working data stays on the device, and a **backup copy of everything** goes

somewhere that survives the device.

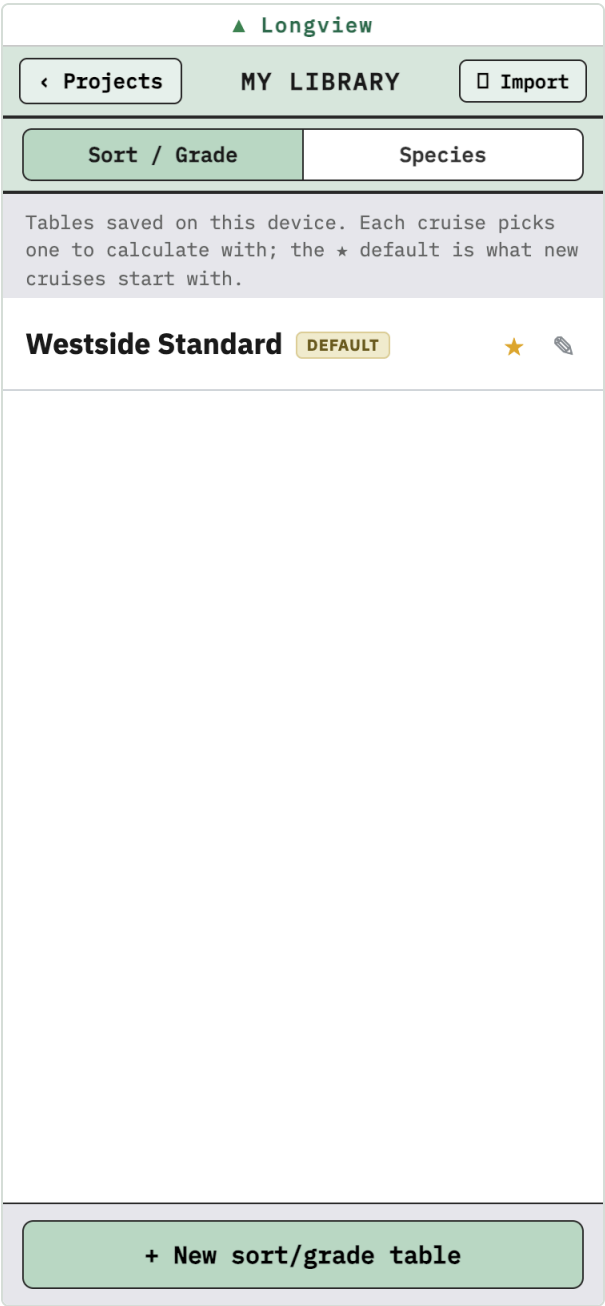


Backup & Restore: a memory card copy (works with no signal) and a cloud folder copy (syncs when you have signal).

- **Memory card** — always available, no signal needed. The rig for remote country.
- **Cloud folder** — an off-site copy that syncs whenever the device finds signal.

Set up one or both once; Longview keeps them current and shows the backup status right on the home screen. After a lost or broken device, install Longview Field on the replacement, point Restore at your memory card or cloud folder, and carry on.

Tables on the device



Your table library on the device: species and sort/grade tables, with a starred default.

The mobile device carries its own library of species and sort/grade tables. Every cruise picks one of each to calculate with; the starred default is what new cruises start from. You can import tables sent from the office and edit tables on the device — so the crew cruises with exactly the sorts the mill wants this quarter.

Sending the cruise in

When you're ready, use **Export / Share** on the project. Longview writes one compact cruise file — **PROJECTNAME.osfield** — and hands it to the device's standard share options: email it, drop it in a cloud folder, or move it by cable. That one file carries the whole project: types, plots, trees, GPS fixes, and any tables the cruise used. Part 4 picks up from the desktop side.

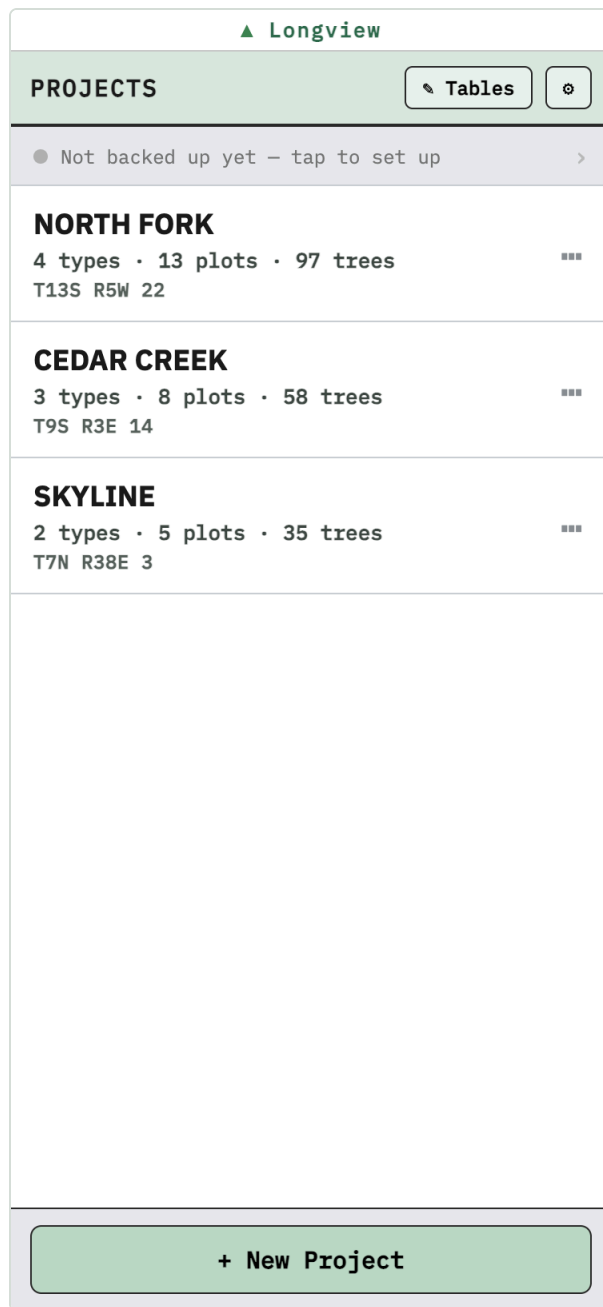
Part 3 — Longview Field: the Inventory cruise

This chapter is the whole field workflow for an **Inventory cruise** — the one where you measure what the tree is and let the office build the logs. Everything you need on the mobile device is here, start to finish. (Bucking logs in the woods instead? That's Part 2.)

An inventory moves fast because you're not merchandising in the field. You record **species, diameter, total height, and a form (taper) point**, on coded pick-lists that keep a whole crew consistent, and Longview — at the desk — turns each tree's shape into logs and volume once, the same way for every tree. Everything below happens on the device, offline; statistics compute live as you go.

Projects, types, and plots

Data is organized the way you already think about it: a **project** (the job) holds **types** (the stands you're cruising) which hold **plots** which hold **trees**.



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Type 004D 95 ac · 3 plots · 23 trees T13S R5W 22 · MAT	
+ New Type	

Inside a project: its types, grouped by tract, with acres, plot and tree counts at a glance.

Each type carries its own setup — tract, legal (township / range / section), acres, and cruiser initials — so a project can span multiple tracts and cruisers without confusion.

Starting from an Inventory template

Every project begins from a **collection template** — a saved setup that decides which columns, species, and codes the field screens show, and how the cruise exports. For an inventory you pick an **inventory template**, and it reshapes the field screens for measuring the tree rather than bucking it:

- Entry becomes **species, diameter, total height, and a form (taper) point** — no log columns.
- The descriptive codes — **status, crown class, damage, species group** — become **pick-lists**, so a coded inventory stays consistent across a crew instead of drifting from cruiser to cruiser.
- Heights are taken on a set fraction of trees, and Longview flags which trees still **owe** a height so nothing gets missed.

Load a template the office sent you from **Tables** → **Import** (an .ostemplate file); it joins the New Project list and stays there. Because the template also carries how the cruise *exports*, an inventory collected against a client's template comes out in exactly the shape that client — or their stand-analysis system — expects, with no office rework.

Type setup: where the sampling design lives

▲ Longview

Cancel Edit Type Save

Tract

ELK RIDGE

Type / stand name

001A

Type acres

120

Location (this type)

Township

T13S

Range

R5W

Section

22

Cruiser (3 char)

MAT

Cruise method

Standard Stand Table

Fixed-area plots (F1-F5)

F1	F2	F3	F4	F5
0.01				

Type setup: tract, legal, acres, cruiser — and the F, R, and S factor slots.

An inventory expands to the acre exactly like any other cruise, so the sampling factors are the same:

- **F1–F5** — fixed-area plot sizes. Enter either acres (a value under 1) or a plot radius in feet (1 or more) — Longview understands both and converts radius to acres for you.
- **R1–R5** — reforestation (regeneration) plot sizes, same acres-or-radius rule.
- **S1–S5** — percent / strip expansion multiples: each measured tree stands for this many trees in the whole type, regardless of acreage.

- **Age classes 1–9** — the ages behind each age-class code, so a one-digit code on a tree carries a real age.

Prism BAFs are **not** entered here — a prism tree carries its BAF directly in the X column of its own row, so one plot can mix BAFs and nothing is hidden in a settings screen.

The inventory entry screen — measure the tree, not the logs

Inventory entry is deliberately lean: for each tree you record its expansion (X), species, diameter, total height where it's part of the height sample, and a form point. The descriptive codes are pick-lists, so you're choosing from the crew's agreed set rather than typing free text.

- **Species and DBH** — as always, the backbone of the record.
- **Total height** — taken on the height sample (see the height primer below). This is the height, full stop — to the tip.
- **Form point** — the taper reference the office will buck from (see the form-point primer below).
- **Coded pick-lists** — status, crown class, damage, and species group, chosen from the template's lists so the whole crew codes the same way.

Height sampling — and which trees still owe one

You don't measure a height on every tree in an inventory — you measure a representative sample, and Longview predicts the rest at the desk from a height-to-diameter relationship (Part 6). The field job is to make sure the sample is there and spread across your diameters.

Longview marks which trees still **owe** a height so you can fill the gaps before you leave the unit — the same “fix it while you're standing here” idea as the live statistics.

Form points — the taper the office bucks from

On an inventory the **form point** carries more weight than on any other cruise: it is how the office reconstructs the shape of a tree that was never bucked. Longview volumes a tree from its shape, not a canned table — the form point is the upper-stem reference for how fast the trunk tapers above breast height, and with diameter and total height it defines a taper curve from stump to tip.

At the desk, Longview bucks that curve to your preferred log lengths and reads each log's small-end diameter off it, so a field form point translates directly into the log diameters — and the volume — the client receives. It is worth measuring with care.

Where a tree has a height but no measured form point, Longview supplies a regional form so a stem profile can still be built. That fallback is a safety net, not a substitute: a measured form point always wins, and a stand measured with real form points volumes more truly than one relying on the default.

Total height — and why it matters here

On an inventory, **height means total height, to the tip** — not the merchantable top. It matters more here than on a merch cruise for two reasons: with no field-bucked logs, the total height and form point are what the office builds the entire stem profile from; and an inventory is usually collected to be grown, and the Growth module (Part 5) runs on FVS, which grows total height and derives the merchantable stem from it.

A merchantable-top height recorded where total height belongs makes every downstream number wrong in the same direction — the tree is modeled shorter than it is, so it under-volumes today and grows on the wrong trajectory. On an inventory there is no separate merch height to correct it later. Heights go to the tip.

How inventory trees expand to the acre

One point to keep clear: **inventory changes how volume is built, not how trees are expanded to the acre**. Every tree carries its own expansion in the **X column** — a prism tree its BAF, a fixed-plot tree its plot code (F1), a strip tree its S code — and expands on its own size, exactly as in any cruise (new trees inherit the previous tree's X and species, so you rarely touch it). Prism expands by tree size ($\text{BAF} \div \text{basal area}$), a fixed plot by its area ($1 \div \text{plot acres}$), a strip or percent by a flat multiple. The office builds each tree's logs from its measured shape only *after* that expansion; the full method reference is in Part 6.

Voice mode

▲ Longview

< P 0102 NORTH FORK 00 ▢
• VOICE

Tre No	X	Spc	Age	Cnt	St	DBH	FP	FF	Top	Bole Ht	Tot Ht
1	35.00	DF	1	1		8	4	88	0	55	55
2	35.00	WH	1	1		15.0	4	88	0	68	68
3	35.00	SS	1	1		22.0	4	88	0	81	81
4	35.00	RC	1	1		29.0	4	88	0	94	94
5	35.00	RA	1	1		36.0	4	88	0	107	107
6	35.00	PP	1	1		9.0	4	88	0	120	120
7	35.00	DF	1	1		16.0	4	88	0	58	58
8	35.00	WH	1	1		23.0	4	88	0	71	71

+

SITE

OTHER

MEAS

LOGS

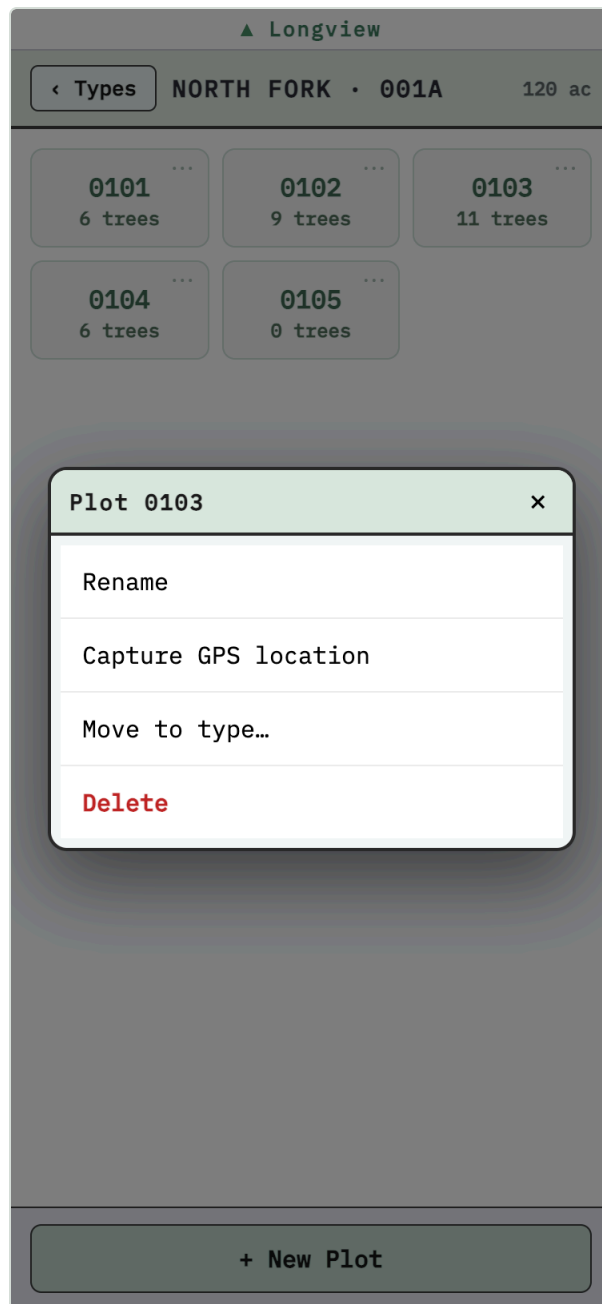
1	2	3	A	B	C
4	5	6	D	E	F
7	8	9	G	H	J
.	0	--	N	P	R
◀	DEL	▶	V	X	Z

≡ Menu

Voice armed: the VOICE button lights and Longview listens for values, hands-free.

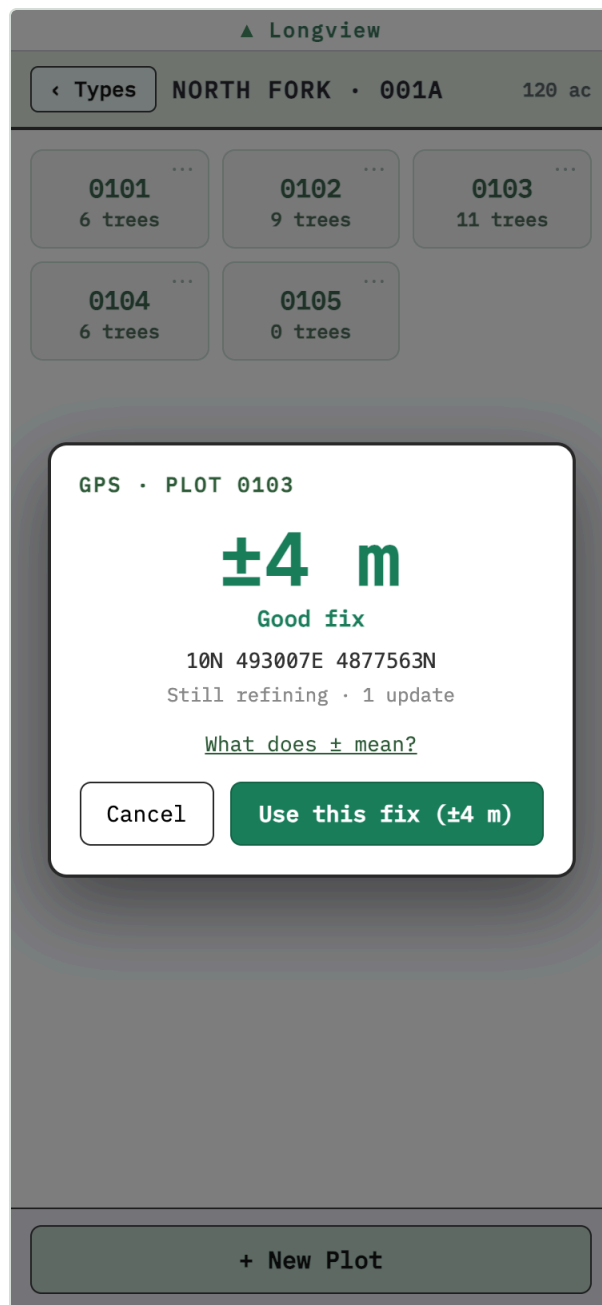
Tap VOICE and call your measurements instead of tapping them — the cursor advances just as if you'd typed, with a confirmation beep. On an inventory it's a natural fit: call the species, diameter, and height and keep your hands on the instrument. Voice settings (in the entry Menu) let you tune how it listens.

Plot tools: GPS, moving, renaming



The plot menu: rename, capture GPS, move to another type, or delete.

GPS at the plot. Capture the plot center from the plot menu. Longview shows the fix quality plainly — the $\pm$ accuracy in meters and a plain-words rating — and keeps refining while you watch. Take the fix when you're happy with it; the coordinates ride along with the plot and export later as mapping files (Part 4). On a property-wide inventory, plot-center GPS is what lets the whole thing land on a map afterward.



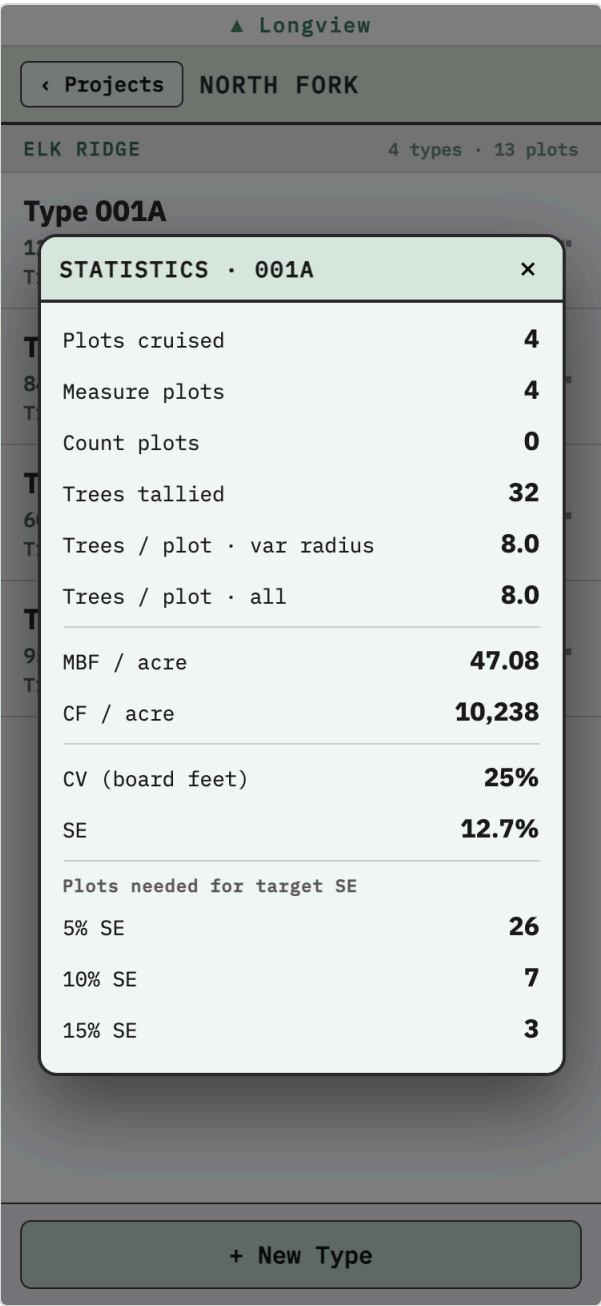
A GPS fix: accuracy, quality, and coordinates — take it when it's good enough.

Moving a plot. Dropped a plot in the wrong type, or re-typed the stand after walking it? Move the plot — trees and all — to another type in the project. No re-entry, no copy-paste.



Move a plot to any other type in the project — the trees travel with it.

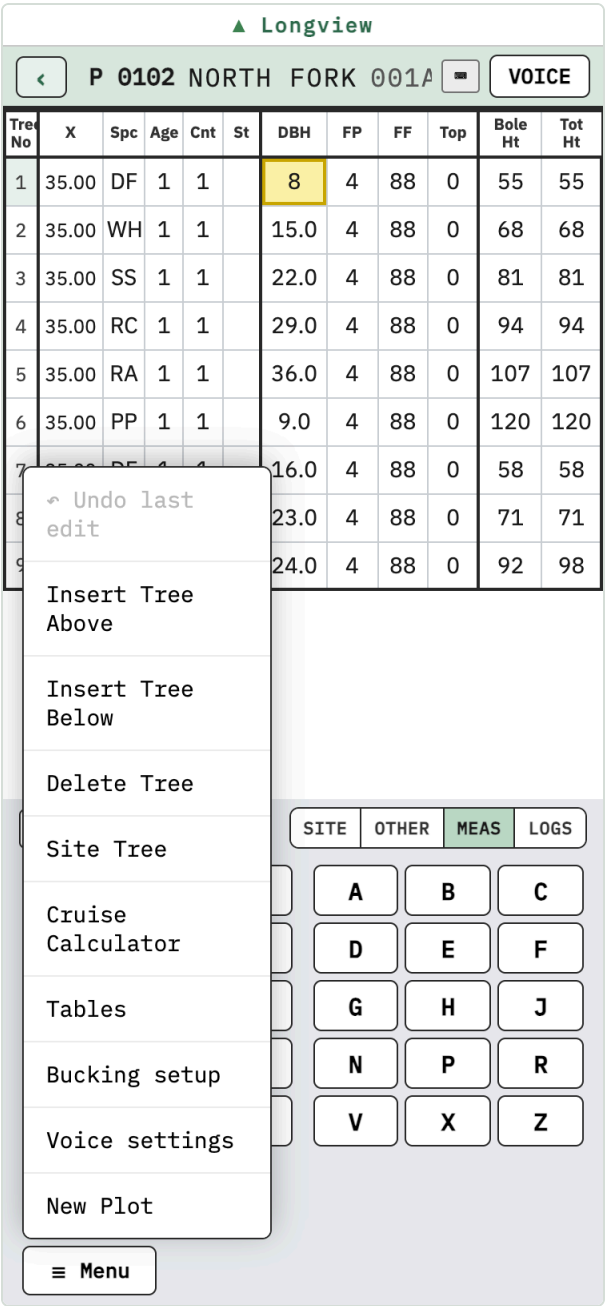
Live statistics in the field



Per-type statistics, computed on the device: plots, trees, volumes per acre, CV, and standard error.

Open Statistics on any type and see, immediately: plots cruised, trees tallied, trees per plot, MBF and cubic feet per acre, the coefficient of variation, and the standard error. Even though the bucking happens at the desk, the volume shown here is real — built from each tree’s shape the same way the office will — so this is still the “do I have enough plots?” answer while the crew is standing in the unit.

The entry menu



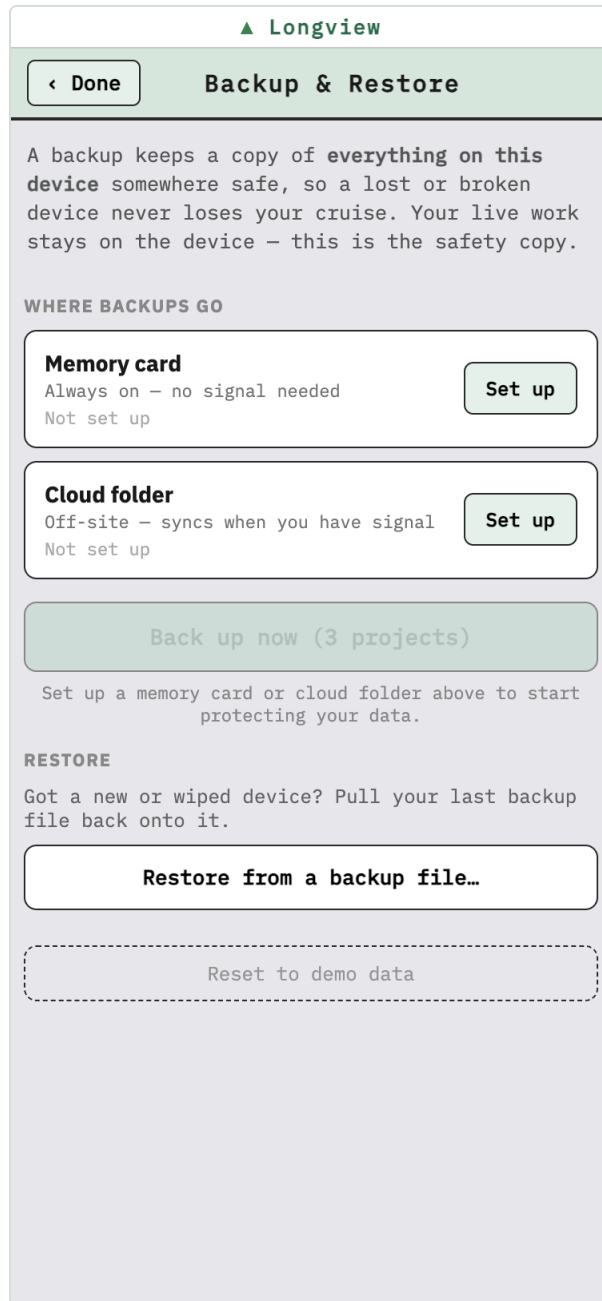
The entry menu: undo, insert or delete trees, site trees, the cruise calculator, tables, voice setup, and new plots.

Everything else lives one tap away in the entry menu: undo your last edit, insert a tree above or below the cursor, mark a site tree, open the cruise calculator, jump to tables, adjust voice settings, or start the next plot.

Backups — assume the device will die someday

Field devices get dropped, drowned, and lost. Longview’s backup design starts from that assumption: your working data stays on the device, and a **backup copy of everything** goes

somewhere that survives the device.

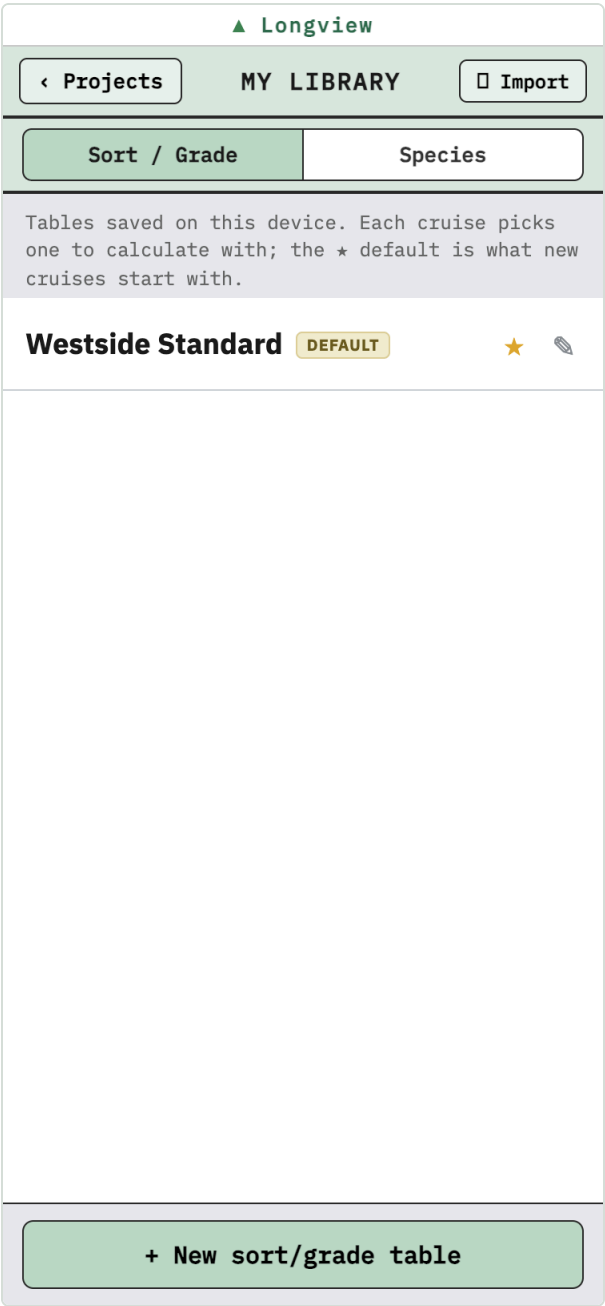


Backup & Restore: a memory card copy (works with no signal) and a cloud folder copy (syncs when you have signal).

- **Memory card** — always available, no signal needed. The rig for remote country.
- **Cloud folder** — an off-site copy that syncs whenever the device finds signal.

Set up one or both once; Longview keeps them current and shows the backup status right on the home screen. After a lost or broken device, install Longview Field on the replacement, point Restore at your memory card or cloud folder, and carry on.

Tables on the device



Your table library on the device: species and sort/grade tables, with a starred default.

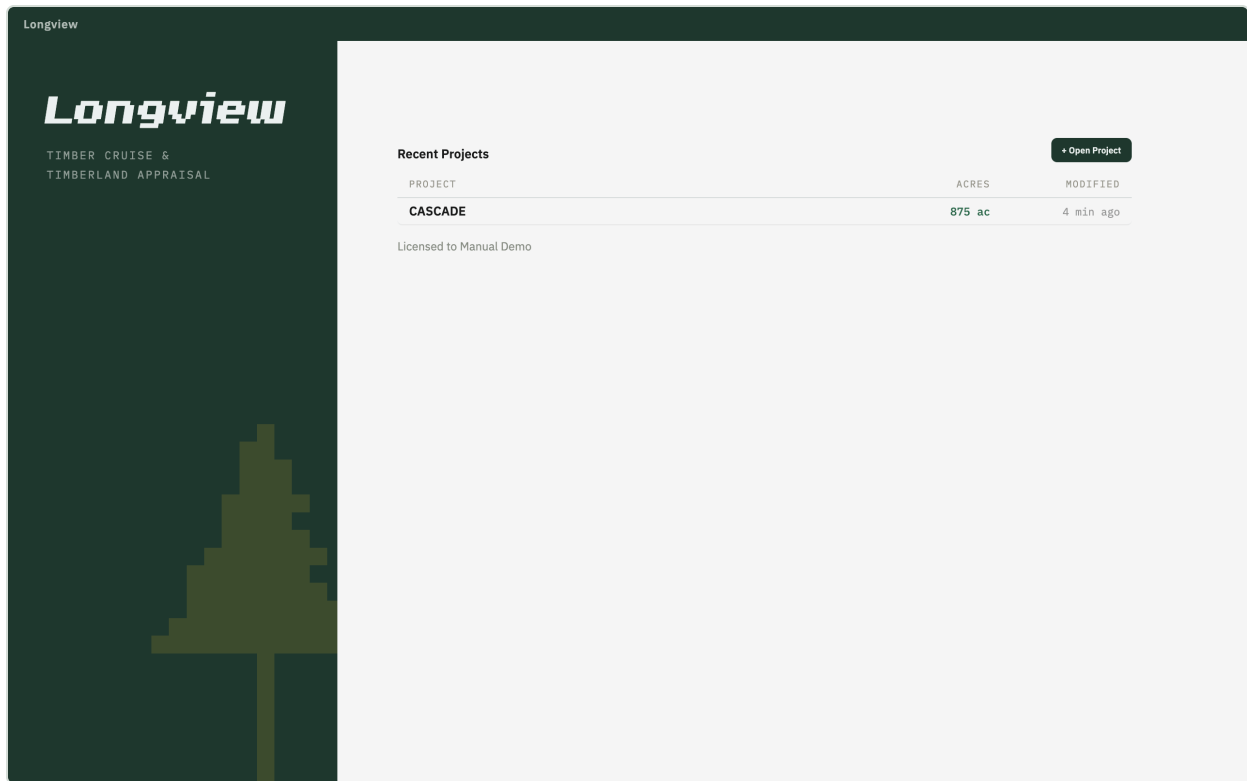
The mobile device carries its own library of species and sort/grade tables. Every cruise picks one of each to calculate with; the starred default is what new cruises start from. Even on an inventory, the sort/grade table matters — it’s what the office bucking will merchandise against — so cruise with the table the job calls for. You can import tables sent from the office and edit them on the device.

Sending the cruise in

When you're ready, use **Export / Share** on the project. Longview writes one compact cruise file — **PROJECTNAME.osfield** — and hands it to the device's standard share options: email it, drop it in a cloud folder, or move it by cable. That one file carries the whole project: types, plots, trees, form points, GPS fixes, and any tables the cruise used. Part 4 picks up from the desktop side — including the office bucking that turns your measured trees into logs.

Part 4 — Longview Desktop

The desktop app is the office side of Longview, and it's the same for both modes: it opens cruises from the field or from archives, gives you a full-screen editor over every tree, and produces the reports and exports the job ends with. Where a step differs for a merch cruise versus an inventory, it's called out.



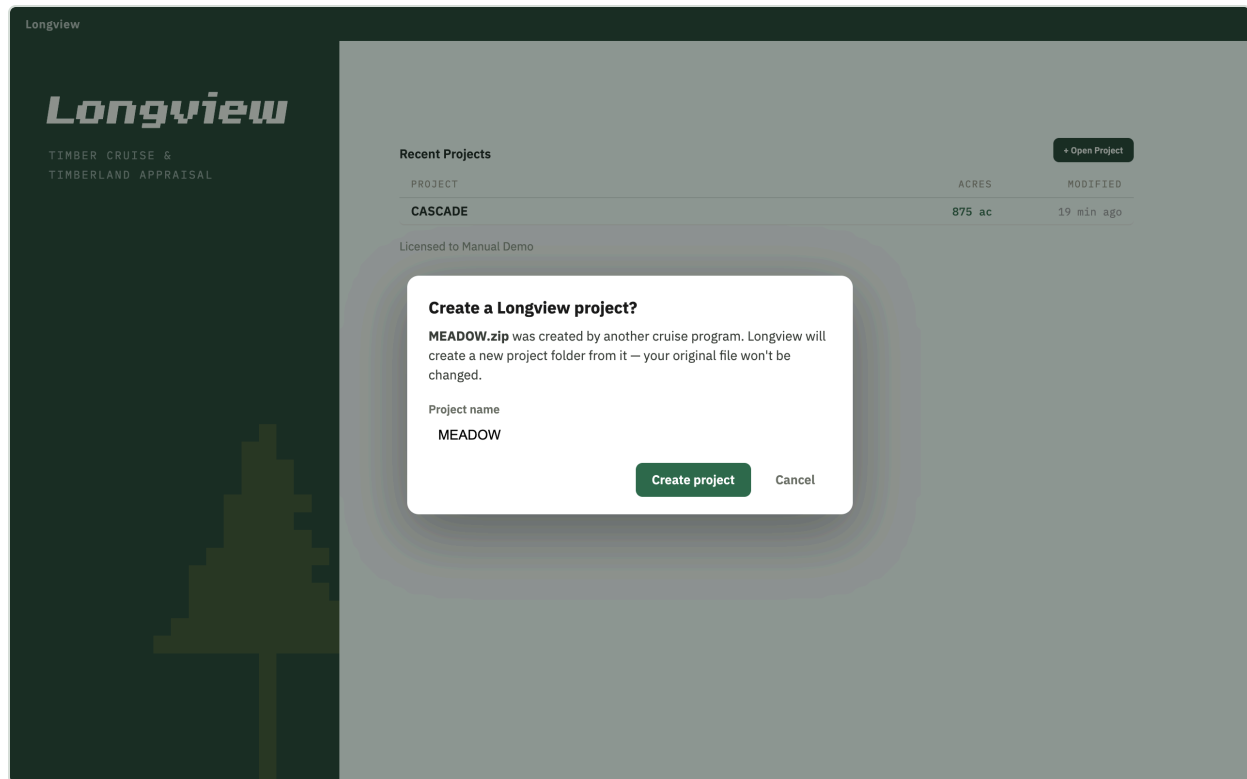
The landing screen: recent projects, one click to reopen.

Opening projects — and what the file types mean

Longview opens several kinds of files. In plain terms:

- **.osspace** — a live Longview project. Each project lives in its own folder along with its rolling backups; opening it picks up exactly where you left off.
- **.ospc** — a sealed, single-file copy of a project. Use it to send a project to another Longview user or to archive a finished job as one tidy file.
- **.ospkg** — a sealed package: the project plus its backup history, for a complete archive.
- **.osfield** — a cruise from the mobile device (see “Bringing in field data” below).
- **.ostable** — a portable bundle of reference tables, for moving your table library between computers or out to the crew’s devices.

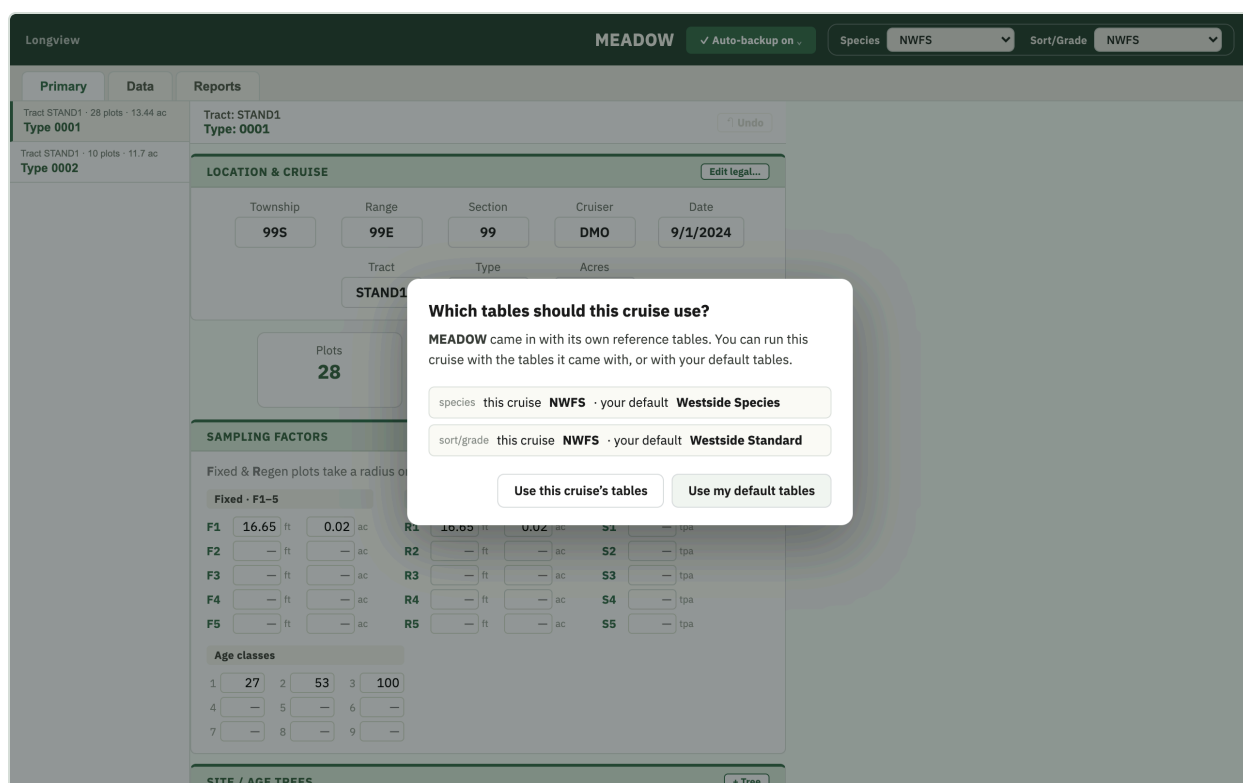
- **SA08 backup (.zip)** — a backup archive from the older cruise program many of us ran for years. Longview opens these directly and converts them into Longview projects — your original file is never modified.



Opening an SA08 backup: Longview creates a new project from it and leaves the original untouched.

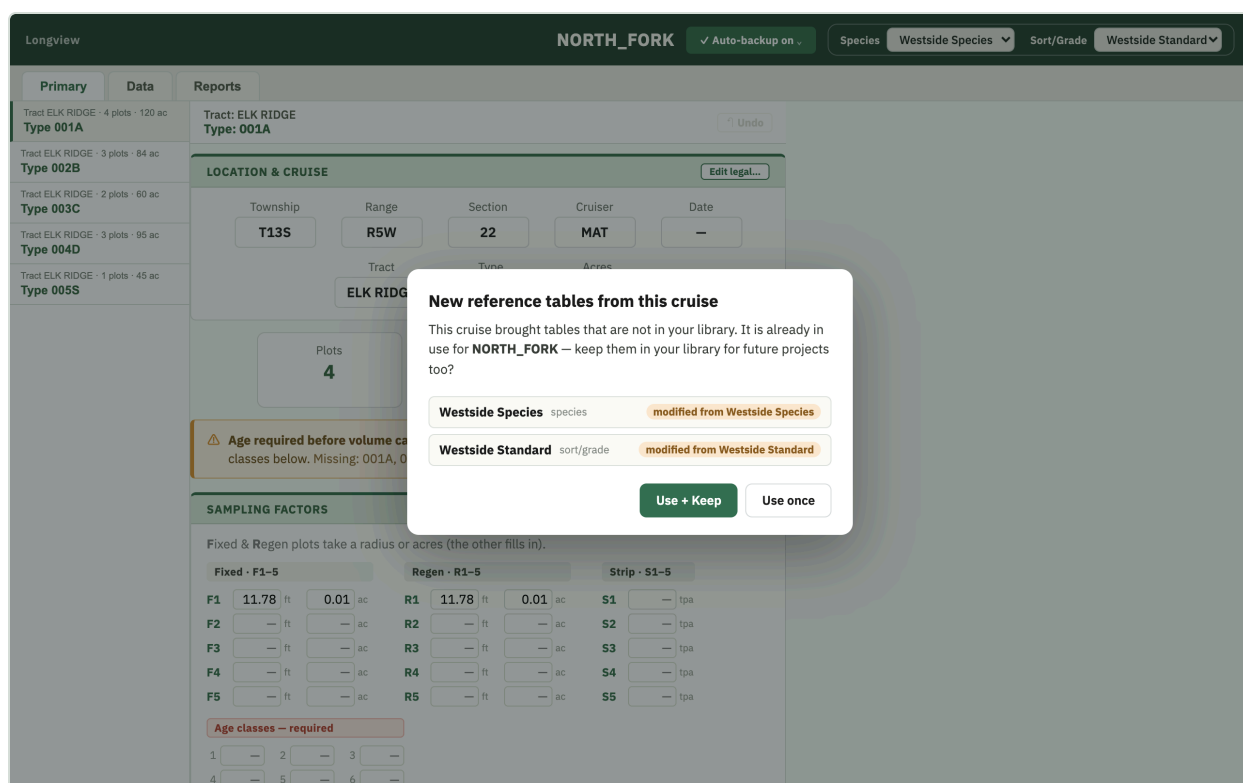
Reference tables — your library vs. this cruise

Longview keeps a firm line between **your library** (the species and sort/grade tables you trust, on your computer) and **this cruise's tables** (whatever a project brought with it). Opening someone else's cruise never quietly rewrites your library, and your library never quietly rewrites their cruise. When a choice has to be made, Longview asks — plainly:



A newly imported cruise came with its own tables: run it with those, or with your defaults — your call, made explicit.

When a field cruise brings a table that isn't in your library at all, Longview offers to keep it for future projects — or use it just this once:



A cruise brought new tables: keep them in your library, or use them once.

Mark any table as your **default** and it follows you across projects. And if the active sort/grade table doesn't recognize a code the cruise data uses, Longview warns you — it never silently drops a sort.

Species exceptions — one species, its own rules

Sometimes one species needs different limits than everyone else — a shorter minimum length for cedar, a different top diameter for hemlock pulp. In Longview that's a **species exception**, and it lives inside the same table:

- 1. In the table editor, find the general sort (or grade) you want to vary and press its **copy** button. Longview duplicates the row right below the original.
- 2. In the copy's **Species** column, list the species it applies to — one code or several (DF, or DF RC WH). The row picks up an **SPP** tag so exceptions are easy to spot.
- 3. Change what differs — minimum or maximum diameter, length, whatever the exception is about. Leave the rest matching the general row.

From then on, trees of the listed species use the exception row and every other species uses the general rule — same code, no second table to maintain.

The Primary screen

The screenshot shows the 'Longview MEADOW' interface. At the top, there's a header with 'Longview', 'MEADOW', 'Auto-backup on', 'Species: NWFS', and 'Sort/Grade: NWFS'. Below this is a navigation bar with 'Primary', 'Data', and 'Reports' tabs. The 'Primary' tab is active, showing a list of tracts on the left: 'Tract STAND1 - 28 plots - 13.44 ac Type 0001' and 'Tract STAND1 - 10 plots - 11.7 ac Type 0002'. The main area displays the 'LOCATION & CRUISE' section for 'Tract: STAND1 Type: 0001'. This section includes fields for Township (99S), Range (99E), Section (99), Cruiser (DMO), Date (9/1/2024), Tract (STAND1), Type (0001), and Acres (13.44). Below this, there are three summary boxes: 'Plots: 28', 'Site Index (King 50): 116 (Mean 3 trees)', and 'Sample Methods: BAF 20.00'. The 'SAMPLING FACTORS' section follows, with a note: 'Fixed & Regen plots take a radius or acres (the other fills in)'. It contains three sub-sections: 'Fixed - F1-5', 'Regen - R1-5', and 'Strip - S1-5'. Each has five rows of input fields for radius (ft) and area (ac). The 'Fixed' section has values like 16.65 ft and 0.02 ac. The 'Regen' section has similar values. The 'Strip' section has empty fields. Below these is the 'Age classes' section with a 3x3 grid of input fields. The bottom of the screen shows a 'SITE / AGE TREES' section with a '+ Tree' button.

Primary: location and cruise identity, the sampling factors, age classes, and site/age trees for the selected type.

Primary is a type's front page. It holds the identity (tract, type, legal, cruiser, acres), the **sampling factors** — the same F1–F5, R1–R5, and S1–S5 slots as the mobile device, with the same acres-or-radius convention — and the **site & age trees**. From the site trees, Longview computes a King (1966) Douglas-fir site index for each tree and shows the type's **average site index** across them.

BAFs are not entered on Primary. A prism tree's BAF lives in the X column of its own row in the Data screen — so mixed BAFs are visible right where the trees are.

Stand administration — the record behind the numbers

Above the sampling design, each stand carries an **administration record**: the working acres (gross and net), the site index and site species, the measurement and report years, the legal description, and any **custom fields** your office tracks across a property. Longview surfaces it as a property-level table — every stand in rows, the admin fields in columns — so you can see and edit the whole ownership at once, and it travels inside the project. The **net (reporting) acres** here are what per-acre results expand against, so they are worth getting right.

The Data screen — every tree, every log

Longview

MEADOW

Auto-backup on

Species NWFS

Sort/Grade NWFS

Primary

Data

Reports

Tract STAND1 - 28 plots - 13.44 ac
Type 0001

Tract STAND1 - 10 plots - 11.7 ac
Type 0002

Tract: STAND1
Type: 0001

9 to review

+ Tree

- Tree

+ Seg

- Seg

Undo

LOGS

Tree	X	Sp	Age	St	Cnt	DBH	FP	FF	TDF	Bole	Tot Ht	01	02	03	04	05	Net BF	Net CF
Plot 0202 - 6 trees																		
#1	20.00	GF	3		1	21	16	88	4	84							360	105
#2	20.00	GF	3		1	21	16	86	4	90							380	108
#3	20.00	GF	3		1	26	16	90	4	90							780	168
#4	20.00	GF	3		1	25	16	86	4	86							580	148
#5	20.00	GF	3		1	28	16	87	4	75							700	169
#6	20.00	BM	2		1	18	16	75	4	40							90	25
Plot 0203 - 4 trees																		
#1	20.00	GF	2		1	20	16	84	4	75							260	77
#2	20.00	GF	2		1	16	16	78	4	68							150	50
#3	20.00	GF	2		1	15	16	91	4	62							140	42
#4	20.00	RC	2		1	18	16	80	4	43							60	44
Plot 0204 - 7 trees																		
#1	20.00	BM	2		1	22	16	85	4	38							210	57
#2	20.00	BM	2		1	27	16	86	4	36							80	79
#3	20.00	BM	2		1	18	16	84	4	52							150	48
#4	20.00	BM	2		1	32	16	50	4	52							110	34
#5	20.00	BM	2		1	32	16	60	4	50							150	46
#6	20.00	BM	2		1	23	16	86	4	45							270	72
#7	20.00	BM	2		1	25	16	88	4	37							260	61
Plot 0209 - 2 trees																		
#1	20.00	DF	1		1	7	16	84	4	39			8				30	6
#2	20.00	DF	1		1	14	16	85	4	58			9				100	32
Plot 0210 - 8 trees																		

The Data screen: a spreadsheet-fast grid of every tree in the type. Arrow keys, Enter, and type-over editing throughout.

Two ways to look at logs:

- **One tree at a time** — double-click a tree (or press ⌘ 1 / Ctrl-1) to open just that tree’s logs under it.
- **Everything at once** — the **LOGS** button (or ⌘ 2 / Ctrl-2) opens the logs of every tree in the grid for a full audit pass.

Longview

MEADOW

✓ Auto-backup on

Species NWFS

Sort/Grade NWFS

Primary

Data

Reports

Tract: STAND1 · 28 plots · 13.44 ac
Type 0001

Tract: STAND1 · 10 plots · 11.7 ac
Type 0002

Tract: STAND1
Type: 0001

△ 9 to review

+ Tree

- Tree

+ Seg

- Seg

↶ Undo

LOGS +

Tree	X	Sp	Age	St	Cnt	DBH	FP	FF	TDF	Bole	Tot Ht	O1	O2	O3	O4	O5	Net BF	Net CF			
Plot 0202 · 6 trees																					
1	20.00	GF	3	1	21	16	88		4	84							360	105			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet
1	C	2	40											21	14	41	290	74			
2	D	3	40											14	7	82	70	31			
2	20.00	GF	3	1	21	16	86		4	90							380	108			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet
1	C	2	40											21	14	41	290	75			
2	D	3	40											14	8	82	90	33			
3	20.00	GF	3	1	26	16	90		4	90							780	168			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet
1	C	2	40											25	19	41	600	114			
2	C	3	40											19	11	82	180	54			
4	20.00	GF	3	1	25	16	86		4	86							580	148			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet
1	C	2	40											25	17	41	460	105			
2	D	3	40											17	9	82	120	43			
5	20.00	GF	3	1	28	16	87		4	75							700	169			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet
1	C	2	40											28	19	41	600	128			
2	D	3	--											18	9	76	100	41			
6	20.00	BM	2	1	18	16	75		4	40							90	25			
Log	Sort	Grade	Length	BF	R	BF	In	CF	R	CF	In	Def %	Butt	DIB	Top	DIB	Cum	Len	Net BF	Net Cu	Feet

LOGS mode: each tree's logs open beneath it — sort, grade, length, computed diameters and board feet.

The desktop editor shows the same **ghost length** as the field app: on a tree's last log, the gray suggested length is the feet remaining to the top of the bole. Undo covers your edits — including factor edits on Primary — and auto-backup (the badge in the title bar) snapshots the project every few minutes while it changes, keeping a rolling set you can restore from.

Count trees and count plots on the desktop

A count tree is a tally: species, expansion factor, and a tree count — no diameter, no heights, no logs. Longview expands it from the measured trees of the same species, and a plot that holds only count trees is a count plot: it sharpens trees per acre without entering the volume average. On the desktop, the way to make one is specific, so it is worth stating plainly:

- **Add a count tree** — put the cursor on the plot, press **+ Tree**, enter the species, enter **0** in **DBH**, then the tree count. The 0 in DBH is what tells Longview this row is a count tree; the moment you leave the DBH cell the row is saved as one, and its volume columns show a dash.
- **Convert a measured plot to a count plot** — delete its measured trees with **- Tree** and add one count tree per species with that species' total count.
- **A tree never changes kind by typing** — entering 0 in the DBH of an existing measured tree, or a diameter into an existing count tree, is refused with a note saying what to do instead. Delete the tree and add a new one. This keeps a slipped keystroke from silently changing your volumes.

Two more cell rules, both there to keep the numbers honest. Emptying a form factor, form point, bole height, or total height cell saves the blank — the tree is then flagged red as missing that value, and it contributes *no* volume until you fill it in, so do not leave red cells behind. A measured tree's DBH cannot be emptied: without a diameter there is nothing to expand, so the cell snaps back to the saved value.

Office bucking — where an inventory's logs come from

On a **merch cruise**, the logs in this grid are the ones your cruiser bucked in the woods; the desktop just recomputes their diameters and board feet and lets you audit them. On an **inventory cruise**, there were no field logs — so Longview builds them here, at the desk, from each tree's diameter, total height, and form point. It grows a stem profile, bucks it to your preferred log lengths against the active sort/grade table, and fills in the log rows you see. The rules live in one place, so every tree in the inventory is merchandised identically — no hundred separate field calls. The mechanics are the same engine described in Part 6; the only difference is that an inventory feeds it a shape instead of field-bucked logs.

Bringing in field data — including “Day 2”

File ► Bring in Field Data opens a cruise file from the mobile device. Two things can happen, and Longview tells you which:

- **A new cruise** — Longview creates a new project from it. You name it and choose where it lives:

Longview

MEADOW ✓ Auto-backup on . . . Species NWFS Sort/Grade NWFS

Primary Data Reports

Tract STAND1 - 28 plots - 13.44 ac
Type 0001

Tract STAND1
Type: 0001

Undo

LOCATION & CRUISE Edit legal...

Township Range Section Cruiser Date
99S 99E 99 DMO 9/1/2024

Tract Type Acres
STAND1

Plots 28

SAMPLING FACTORS

Fixed & Regen plots take a radius of

Fixed - F1-5

F1	16.65	ft	0.02	ac	R1	16.65	ft	0.02	ac	S1	—	tpa
F2	—	ft	—	ac	R2	—	ft	—	ac	S2	—	tpa
F3	—	ft	—	ac	R3	—	ft	—	ac	S3	—	tpa
F4	—	ft	—	ac	R4	—	ft	—	ac	S4	—	tpa
F5	—	ft	—	ac	R5	—	ft	—	ac	S5	—	tpa

Age classes

1	27	2	53	3	100
4	—	5	—	6	—
7	—	8	—	9	—

SITE / AGE TREES + Tree

Bring in field data

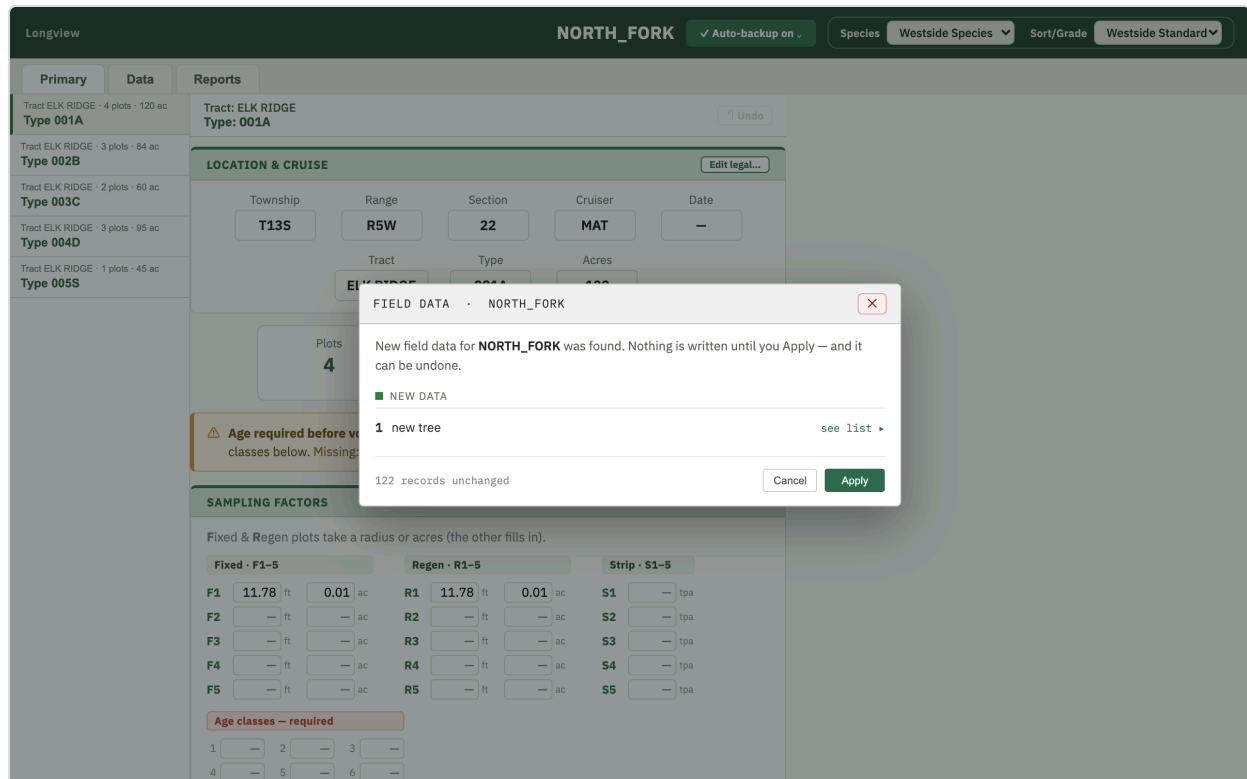
NORTH_FORK.osfield is a new cruise from the mobile device.
Longview will create a new project for it — name it and choose where it should live.

Project name
NORTH_FORK

Create project Cancel

A fresh cruise arrives: name the new project and choose its home.

- **More data for a project you already have** — what we call **Day 2**. The term isn't universal, so here's what we mean: the crew goes back to the same ground on a later day — more plots, corrections, new types — and sends a new cruise file for a project that already exists on your desktop. Longview recognizes it and opens a review instead of importing a duplicate:



The Day 2 review: what's new, what changed, what's untouched — nothing is written until you press Apply, and it can be undone.

The review lists new trees and plots, shows changes side by side, and defaults every conflict to keeping your desktop value. Nothing touches the project until you press Apply — and Apply can be undone. Repeat for Day 3, Day 4, and so on; the same review handles each new file.

Reports

The screenshot shows the Longview Reports interface. On the left is a sidebar with sections: Primary, Data, and Reports. Under Reports, there's a 'REPORT BUILDER' section with 'EXPORT' buttons for 'Print / PDF' and 'Excel (.xlsx)'. Below that is a 'SECTIONS' section with a dropdown menu set to 'Stand Summary' and a '+ Add section...' button. Further down are 'CURRENCY' options for 'Scribner (BF)' and 'Cubic (CF)', a 'REPORT' section with a 'Rebuild report' button, 'LOG RULES' for 'BF Rule' (Default) and 'CF Rule' (Smallian), a 'VIEW' section with 'Combined' and 'By Type' buttons, and 'STANDS' with 'STAND 0001' and 'STAND 0002' buttons. The main area displays a 'Stand Summary' report for 'MEADOW' with 'All Types Combined' and '25.14 Acres'. The report includes a table with columns for Species, Sample Trees, Trees / Acre, Avg Bole, Avg DBH, Rel Den, Basal Area, Net BF, Net CF, Gross BF, and Gross CF. The table lists various tree species and their metrics, with a 'Total' row at the bottom.

Species	Sample Trees	Trees / Acre	Stand			Rel Den	Basal Area	Volume per Acre			
			Avg Bole	Avg DBH				Net BF	Net CF	Gross BF	Gross CF
Bigleaf maple	36	25.4	38	16.8	9.5	39.1	1,448	729	1,558	729	
Black cottonwood	2	0.7	68	16.5	0.2	1.0	131	37	131	37	
Douglas-fir	62	107.2	50	11.2	22.0	73.9	6,689	2,089	6,860	2,089	
Grand fir	25	8.2	59	18.1	3.5	14.7	1,570	478	1,611	478	
MD	2	4.7	29	10.5	0.9	2.8	47	47	47	47	
Red alder	9	6.6	42	11.6	1.4	4.8	354	122	362	122	
Western redcedar	13	6.9	34	16.2	2.4	9.8	545	212	552	212	
Total	149	159.7	47	13.0	40.6	146.2	10,783	3,714	11,121	3,714	

Reports: pick any type or combination for instant results, then print to PDF or export the workbook to Excel.

The Reports screen computes instantly for whatever scope you highlight: one type, several types combined, or every type in the project — the Combined / By Type / All Types controls plus the type list drive it. What you see is what prints: export the report as a **PDF** for delivery, or as a multi-sheet **Excel workbook** with real numbers that sort and total properly in a spreadsheet.

The report builder assembles multi-section reports — stand summaries, species/sort/grade breakdowns, log stock tables, and cruise statistics — in a clean, consistent layout.

Moving data between projects

File ► Move / Copy opens a two-pane view of two projects side by side. Drag types or plots from one to the other, stage as many moves as you like, then press Commit — nothing changes until then. It's the tool for splitting a big cruise into deliverables, or merging stray field projects into the master.

Exports

- **Longview files** — save a sealed project copy (.ospc), a full package with backups (.ospkg), or a portable table bundle (.ostable). See “Opening projects” above.
- **Mapping files** — export your plot centers (with their GPS fixes) as a **Shapefile** or **KML**, ready for QGIS, ArcGIS, Avenza, or Google Earth. Cruise statistics ride along as attributes, so a plot

on the map knows what was found there.

- **SA08 backup (.zip)** — write the project as a self-contained SA08-format backup file for total cross-platform compatibility. Round-tripping is a core Longview commitment: what you export matches what the cruise recorded.
- **Inventory workbook** — for a stand-level inventory, write the cruise as a multi-sheet workbook — plots, trees, and the stand administration record — in the layout growth-and-yield systems expect, so an inventory flows straight into stand analysis and growth projection.

Desktop backups and restore

Every project folder carries its own rolling backups: Longview snapshots the project every few minutes while it's changing (keeping the most recent couple of dozen), plus an “Original” snapshot from the moment the project was first created. Restore lets you peek inside a backup before you commit to it — and you can restore selectively, pulling just the types or plots you need back from a snapshot.

Part 5 — Growth & Yield

The Growth module takes a cruise you have already run and grows it forward in time. It answers the questions that come after “what is standing there today?” — how much volume will this stand hold in twenty years, what happens if it is thinned at year ten, and when is it economically mature.

Both cruise modes can be grown, and an **inventory** is the natural feed — it’s often collected for exactly this. A merch cruise grows just as well, provided its trees carry **total heights** (see the height primer in Part 2): the growth engine reads total height, not the merchantable top.

The growth itself is done by **FVS** — the Forest Vegetation Simulator, the U.S. Forest Service growth model that has been in use and under review for decades. Longview hands FVS your trees, lets it grow them, and takes the grown trees back. What Longview adds is everything around that: your cruise goes in without re-keying, the projected volume can be scaled in your own conventions rather than the model’s, and the results come out as reports and spreadsheets you can hand to a client.

Growth modeling is a Pro feature. Without a Pro license the tab shows a short description and nothing else.

The three phases

The module is a three-step wizard, and the steps run in order. The stepper across the top shows where you are:

- **1. Setup** — *all types*. Choose the growth model, how far to project, how volume gets scaled, and which types are in the run. This is also where the cross-platform exports live.
- **2. Model & grow** — *per type*. Tune each type on its own: density ceiling, calibration, thinnings. Review the grown yield and pin the year each type contributes to reports.
- **3. Growth Reports** — *all types*. Assemble the report sheets for the whole run and export them.

Steps 2 and 3 stay locked until a run has produced a result — there is nothing to tune or report until the model has run once. The button that gets you there is **Run growth & continue** → at the bottom of Setup. After that first run you can click the stepper to move between the three freely, and **Re-run** any type as you change its settings.

Setup — the whole run

Setup covers the whole run: one growth model, one projection period, one volume convention, applied to every type you check.

Choosing the variant

FVS is not one model — it is a family of regional models called **variants**, each fitted to the species and growing conditions of a particular part of the country. Picking the variant is picking the equations. Longview offers the western variants that matter for this region: **NW Coast** (the coastal Douglas-fir belt — the usual westside choice), **W. Cascades**, **E. Cascades**, **Blue Mtns**, **Klamath**, **S. Oregon**, and **Inland CA**.

There is **one variant for the whole project** — the card is marked *project-wide*. You are not asked to set it per stand, and Longview does not guess it for you. Choose the variant that fits the ground you cruised. If a project genuinely spans two regions, run it as two projects.

Your choice also changes what else is available: the **Growth interval** options, whether slope and aspect columns appear in the types table, the site-index range that triggers a warning, and which calibration dials are live. That is not Longview being fussy — it is the variant's own capabilities showing through.

Species support. Open the **SPECIES SUPPORT** panel inside the variant card to see how your cruise maps onto the model. Every variant models a fixed list of species natively; anything you cruised that the variant does not know gets **substituted** — grown as the most similar species the model does know — and Longview shows you each substitution and why it was chosen, rather than silently lumping odd species into a generic catch-all. Check this before a run. If a species carrying real volume is being substituted, you want to know that when you read the projection, not after you have sent it out.

How far to project

Two fields set the timeline, and both are read from each type's own measure date rather than from today:

- **Horizon from measure** — how many years forward to grow. Default 60.
- **Growth interval** — how often a period is reported. Default 10 years; most variants also offer 5, 2, and 1.

The **REPORTED PERIODS** readout underneath shows the span you will actually get. One useful detail: the current year is always inserted as its own reported period, even when it falls between intervals — so a cruise from a few years back, grown on 10-year steps, still gives you a clean “where does it stand today” line.

The **MEASURED** column in the types table is where the measure date comes from. Longview autofills it from the cruise; typing over it sets a growth-only override and never touches the cruise record.

The volume model — what “Scaled by” means

This is the most consequential choice on the Setup screen. FVS grows *trees* — it returns a diameter, a height, and a trees-per-acre for every stem at every cycle. Turning those grown trees

into *volume* is a separate question, and Longview gives you two answers:

- **Longview** (the default) — the grown trees are run back through Longview’s own taper and scaling engine, the same one that produced your cruise report.
- **FVS** — the model’s own volume library reports the volume.

The default is Longview, and for most work it should stay there. The reason is continuity: your cruise volume and your projected volume come out of the same engine, in the same conventions, so the twenty-year number is comparable to the today number. Longview also anchors the projection to your cruise — at year zero the grown volume reproduces your cruise volume, so the curve starts where your report starts instead of stepping to a different library’s idea of the same stand.

Choosing Longview also unlocks the three bucking fields beside it, because only Longview actually cuts logs. On the FVS setting they are greyed out.

Log length, Shatter, and Cull

These three describe how a grown stem gets bucked:

- **Log length** — your target sawlog length in feet. Default 40. The re-buck cuts logs at this length up the stem.
- **Shatter** — a height in feet, measured up the stem, where the tree is expected to break up on the ground. Blank or zero turns it off, which is the default.
- **Cull** — how many feet are lost at that shatter point. Default 16.

Shatter and Cull work as a pair, and they model something every cruiser has watched happen: a big stem hits the ground and blows apart at a weak point, and you get nothing merchantable out of that stretch. When you set a shatter height, Longview bucks sawlogs up to that point, drops in one cull segment of the length you set in Cull, then resumes bucking sawlogs above it. The cull segment carries no volume — it is charged against the tree the same way any cull log is in your reports.

Leave Shatter off unless you have a specific reason. It is there for stands where breakage is a real and predictable deduction, not as a general fudge factor.

Crown ratio and the types table

FVS wants a crown ratio for every tree and will estimate one if you do not supply it. If your cruise recorded crown ratio in one of the optional O-columns, point the **Source** field at that column and the model uses your measurements instead of its own estimate.

Below the cards, check the types you want in the run. Each row autofills from that type’s cruise — acres, measure year, site index, site species, and (on variants that use them) slope and aspect. Every cell is editable, and edits here belong to the growth run only.

Site index and site species go together. A site index number is meaningless without knowing which species and which base age it refers to — site 120 on Douglas-fir at base age 50 is a different statement than site 120 on ponderosa pine at base age 100. Set the **SITE SPP** to the species your index was actually built for; the picker names the author and base age for each one. FVS converts to whatever the other species need. Getting this pair wrong is one of the few settings that can throw a projection off badly. If your site index falls outside the range the variant expects, Longview flags the row and offers a one-click cap.

Model & grow — one type at a time

Setup ran the whole list; this step is where you work a single type at a time. The ledger on the left lists every type in the run with its configuration state; click one to open it, or stay on the all-types view for the property-wide picture.

Model settings

- **Max density (SDI)** — the Stand Density Index ceiling at which the model starts killing trees off. Longview auto-sets this from the type's species mix. This is the single biggest lever on whether a projection looks realistic: FVS's own default of roughly 950 is far too high for coastal stands, and leaving it there produces stands carrying more volume than the ground would ever hold.
- **Calibration multipliers** — three nudges: mortality, diameter growth, and height growth. 1.0 leaves the model alone; 1.2 runs 20% faster, 0.8 runs 20% slower. Use these to bend the model toward what you have actually measured in your own stands. A greyed dial means this variant carries its own equation and would ignore the setting.
- **FVS keywords** — raw FVS keyword records passed straight through to the run, for users who know the keyword language. Longview cannot check these, and says so; anything FVS rejects comes back in the messages block.

Thinnings

Add as many thinnings as you like with **+ Add thinning**. There is no separate apply step — every thinning you add is in the run, and the preview updates as you go.

Each thinning reads as a sentence: a **year**, a **method**, and what to leave. The methods are **BA from above** (take the big trees first), **BA from below** (take the small ones first — the default), and **by diameter** (remove everything in a diameter window). The basal-area methods thin to a residual you set; the diameter method takes a minimum and maximum DBH. You can also limit a cut to chosen species, and each species is then cut independently. Thinning years snap to reported growth years, so a cut lands exactly when it is scheduled instead of drifting to the next cycle boundary.

The four preview charts — trees per acre, basal area, average diameter, and volume — show the current run against the same stand left unthinned, so you can see what the treatment actually bought.

Reading the output, and the selected year

The output table gives one block per reported period: four species rows and a bold **ALL** row that sums them. Rows are tagged **MEASURED** at the cruise year and **NOW** at the current year. Toggle between board feet and cubic feet with the BF / CF switch. **MBF/ac** is per acre; **TOT MBF** multiplies by the type's acres. Anything FVS wants to tell you appears in the **FVS messages** block below the table — read it, because that is where a substituted species or a rejected keyword surfaces.

Each type contributes **one** growth year to the project-level reports, and you pin it in the **SELECTED YEAR** strip. This exists because stands do not mature on the same schedule: a plantation might be reported at its rotation age while the stand next door is reported at today's date for a refresh. A type with no selected year is left out of the Growth Summary, and the report tells you which ones.

Two deeper views sit in the footer. **Year detail** opens everything about a single year — stand table by species and diameter class, diameter distribution, and volume by scaling-diameter class, with the measured year overlaid. **Economic maturity** finds the year that maximizes value rather than volume: you set prices per MBF above and below a scaling-diameter break and a discount rate for the type, and it reports net present value by rotation age. Prices and the break are shared across types; the discount rate is per type.

Growth Reports

The last step assembles the run into report sheets. Five sections are available:

- **Growth Summary** — one row per type at its selected year: stocking, diameter, and volume, per acre and total.
- **Growth Volumes by Year** — gross and net, board and cubic, by species and reported year.
- **Volume by Scaling Diameter** — net board feet split below and above the scaling-diameter break.
- **Revenue at Harvest** — undiscounted revenue at each type's selected harvest date.
- **Discounted Value** — those revenues discounted back to your date of value.

The rail on the left builds the report. Each section sits in a slot you can change, reorder with ↑ and ↓, or remove with ✕; anything removed can be put back from **+ Add section....** The order on screen is the order in the printed report and in the Excel workbook. Two sheets carry a **Highlight current year** checkbox and a **Selected year / All years** switch — screen controls that do not print.

Why the scaling-diameter sheet is sometimes missing. The **Volume by Scaling Diameter** section only appears when the run can actually resolve diameters. A stand-level type entered as a single average per species has no distribution to spread across classes — enter DBH size classes for that type and the section returns. The FVS volume model also removes it, for the reason below.

How the projected volume is calculated

This explains what happens between “FVS grew your trees” and “here is your projected MBF”, because knowing it is what lets you defend the number.

What comes back from the model. FVS returns each tree grown forward — a new diameter, a new total height, and a new trees-per-acre — at every reported period. The tree keeps its identity through the whole projection, so the stem that was tree 14 on plot 3 in your cruise is still recognizable at year 40. That identity is what makes everything below possible.

Rebuilding the tree’s shape. Longview volumes a tree from its **form** — how fast it tapers from butt to top — not from a canned volume equation. So to volume a *grown* tree it must first work out that tree’s shape at its new size. The tree’s measured form is the starting point; as it grows, its form slides toward the typical mature form for its species, floored at where it started, so a tree can only firm up with age and never taper harder than the day you measured it. Bole length grows by the model’s own height ratio, so the merchantable stem lengthens in proportion to the tree. At year zero this reduces exactly to your cruise — grown diameter equals cruise diameter, the height ratio is 1, the form is the measured form — which is why the projection starts on your report’s number rather than near it.

Where the logs come from. Once the grown stem has a shape, Longview bucks it — starting from the logs your cruiser actually recorded rather than throwing them away:

- Each recorded log is **kept** — its length, its sort and grade, and its defect all carry forward. The diameters are recomputed on the grown taper, so a 40-foot butt log is still a 40-foot butt log, just fatter.
- The **top log is the exception**. If the last recorded log is shorter than your target length, it is dissolved — that was the runt left over from the original buck, and years of growth have changed what belongs up there.
- Everything above the preserved logs is **re-bucked** at your Log length setting, up to the merchantable top, with a final leftover kept only if it clears the species minimum log length. A cruiser leaves a sub-minimum top in the woods, and so does Longview.
- If **Shatter** is set, that re-buck splits around it: sawlogs up to the shatter height, one cull segment, sawlogs above.
- Cull logs stay cull. A log the cruiser called cull keeps its codes and stays uncounted, exactly as it does in your cruise reports.

For an **inventory** cruise there were no field logs to preserve, so every grown tree is simply bucked fresh at your Log length up the grown stem — the same office bucking as Part 4, just on the grown shape instead of the measured one.

The result is a real log list for every grown tree at every period — lengths, grades, and small-end diameters. That log list is what the scaling-diameter outputs are built from.

The limits of FVS for scaling-diameter work. Set **Scaled by** to FVS and the model's own volume library reports the volume. That library returns *a volume for the tree* — it does not buck the stem into logs. No log list means no small-end diameters, which means nothing to sort into scaling-diameter classes. So on the FVS setting the **Volume by Scaling Diameter** report and the grown-log volume export are unavailable, and in **Economic maturity** the split between below-break and above-break value falls back on the stand's average diameter as a proxy — which Longview states on screen rather than presenting an estimate as a measurement.

If your work turns on log size — and appraisal work usually does, since the value gap between a small log and a large one is the whole argument — run on the Longview volume model. Use FVS when you specifically want the model's native volumes for comparison, or to reconcile against another FVS user's output.

A growth projection is a well-informed estimate, not a measurement. Set the density ceiling honestly, check your site index and site species, look at what got substituted, and treat the output as the best defensible estimate of where the stand is headed — not a promise.

Where every export lives

The module's exports are spread across all three phases, because each one belongs with the work that produces it. This is the full map.

Setup — cross-platform exports

The **Export ▼** button in the Setup footer sends the checked types out in another system's native format. These export your *cruise* — the stand as measured — not the projection.

FPS workbook (.xlsx)	Setup ▶ Export ▼. The three-sheet FPS inventory workbook (Plots, Cruise, Admin) — the format FPS imports. A short dialog asks for the BAF-DBH break diameter and whether to write the fixed (F1) or regeneration (R1) plot size.
FVS input database (.db)	Setup ▶ Export ▼. A native FVS input database (FVS_StandInit and FVS_TreeInit) — open it directly in FVS or hand it to a colleague who runs their own.
Cruise data — Excel / CSV	Setup ▶ Export ▼. A flat one-row-per-tree dump of the same trees, for your own analysis.

Both FPS and FVS take their data in through these formats — this is native cross-platform output, not a spreadsheet workaround.

Model & grow — the grown trees

The **Export type ▼** button in the footer exports the open type; the all-types view has its own buttons for the whole run. Everything here is the *projection*, and each offers CSV or Excel.

Yield spreadsheet	Model & grow ▶ Export type ▼. The grown yield table for this type, period by period.
Grown tree list	Model & grow ▶ Export type ▼. One row per tree per period — tree ids matching your cruise, diameter, height, and trees per acre. Choose stems only, or add the model's volumes.
Grown log volume	Model & grow ▶ Export type ▼ (Longview volume model only). Grown logs binned by small-end diameter, with gross, net, and defect.
All types — Spreadsheet / Tree list	Model & grow ▶ all-types view. The same yield and tree-list output covering every type in the run.

Growth Reports — the finished report

Print / PDF	Growth Reports ▶ rail. Prints the assembled sheets, in the order shown, through your system print dialog — choose Save as PDF there.
Excel	Growth Reports ▶ rail. One workbook, one sheet per enabled section, in the same order.
CSV	Growth Reports ▶ rail. The Growth Summary sheet only.

Part 6 — Cruise methods & the math, in plain language

This part explains what Longview actually does with your numbers — enough to choose methods confidently and defend the results. It applies to both modes, and it's written from how Longview itself works; no other program's documentation is being paraphrased.

The one idea under all of it: expansion

A cruise measures a few trees and speaks for many. Every method below is just a different answer to one question: *how many trees per acre does this one measured tree represent?* That answer is the tree's **expansion factor**. Multiply each tree's volume by its expansion factor, average across plots, and you have per-acre numbers. In Longview, the X column on every tree is where that answer lives — which is why you can mix methods in one stand and still trust the total. Expansion is identical in both modes: a merch cruise and an inventory expand trees exactly the same way, and differ only in how each tree's volume is built.

Variable-radius (prism) cruising — a BAF in the X column

Swing a prism or angle gauge from plot center; a tree that fills the angle is “in.” Big trees count from farther away, so *each tree's expansion depends on its own size*: trees per acre = $\text{BAF} \div \text{the tree's basal area}$. A 20" tree at BAF 35 speaks for fewer trees per acre than a 10" tree — that's the method working, not an error.

- Record: species, DBH, form measurements, heights, and — on a merch cruise — logs on measured trees.
- The X column carries the BAF (e.g. 35.00). Change BAF mid-cruise? Type the new one on the tree — each tree expands by its own.
- Count trees (tallied “in” but not measured) still count toward trees per acre and basal area; Longview expands them by their own plot's method. Marking a tree count vs. measure is per tree, decided by what you recorded.

Fixed-radius plots — F codes

A fixed plot is a known slice of ground: every tallied tree represents the same trees per acre = $1 \div \text{plot acres}$. Define up to five plot sizes as F1–F5 on the type; a tree's X column says which one it fell in.

- Enter plot size as acres (under 1, like 0.05) or as a radius in feet (1 or more, like 26.3) — Longview reads the value's size to know which you meant, and the translator converts.
- Nesting is normal: run a small F plot for saplings inside a prism cruise for sawtimber. Small trees carry the F code, big trees carry the BAF, on the same plot, and each expands correctly.

Diameter-and-height-only trees on a fixed plot count toward trees per acre without contributing log volume.

Strip / percent cruising — S codes

Cruise a strip of known width through the stand, or a fixed percentage of the area, measuring every tree encountered. The S factor is a straight **multiple**: you measured this percentage of the stand, so each measured tree stands for that many trees in the *whole type* — itself plus the ones you walked past. A 10% cruise carries a factor of 10; a 5% cruise, 20. Acres don't enter into the factor at all — Longview totals the expanded trees for the type and then divides by the type's acres to report per-acre values. One factor per S slot, no per-tree surprises.

The two ways volume is built — merch vs. inventory

Expansion decides *how many*; this decides *how much per tree*. Longview builds a tree's volume one of two ways, and it's the difference between the two cruise modes:

- **Merch — from field-bucked logs.** Your cruiser cut the tree into logs in the woods (sort, grade, length). Longview scales those logs. The merchandising is the cruiser's call, captured on the spot.
- **Inventory — from the measured shape.** Your cruiser recorded species, DBH, total height, and a form point, and left the logs to the office. Longview grows a stem profile from those, bucks it to your preferred lengths against the sort/grade table, and scales the result. The merchandising rule lives in one place and is applied identically to every tree.

Both paths end at the same scaling engine (below), so their numbers are comparable — an inventory just feeds it a height and a form where a merch cruise feeds it logs. Where an inventory tree has a height but no measured form point, Longview supplies a regional form so a profile can still be built; a measured form point always wins over that fallback. And because heights on an inventory are usually a sample, Longview predicts the missing ones from the measured heights (a standard height-to-diameter relationship) so every tree gets a height without measuring them all.

The Stand Table method — tally everything, measure a sample

For a 100% cruise (or close to it): tally *every* tree by species and diameter, and fully measure a sample of them. Longview then builds the volume of the whole tally from the measured sample — each tallied tree gets the volume profile of the measured trees like it, at **its own recorded diameter**. As noted in Part 2, Longview does not pin tallied trees to the middle of a diameter class — a 13.8" tally expands as a 13.8" tree.

- On the mobile device, the Stand Table cruise method drives this automatically: tally plots take species + DBH only; Force measure opens the full grid for sample trees; the tally chart shows your tallied · measured ratio as you work.

- Keep the measured sample spread across the species and diameters you tallied — the ratio display exists exactly so you notice a hole while you can still fix it.

Regeneration plots — R codes

Small fixed plots for seedlings and saplings, defined in the R1–R5 slots with the same acres-or-radius convention as F plots. Regen trees are usually diameter-and-count records — they carry stocking (trees per acre), not log volume, and Longview reports them that way.

Form points and the taper engine

Longview volumes a tree from its **shape** — how it tapers from butt to top — not from a canned volume equation, and the **form point** (with the **form factor**) is what pins that shape down. The form point is an upper-stem reference; from it, the tree's DBH, and its heights, Longview constructs a taper curve for the whole stem.

Every log's **small-end diameter** is then read off that curve, and the small end is what scales — a log's board-foot volume turns on the diameter of its small end far more than its big end. So the form point isn't a formality: it's the single field measurement that most directly sets each log's scaled volume. On a merch cruise it refines the logs the cruiser bucked; on an inventory it *is* the buck, since the office has nothing else to shape the stem from. Where it's missing, a regional form stands in — good enough to produce a number, never as good as the tree in front of you.

Heights, and what the growth engine needs

A tree carries up to two heights, and keeping them straight is one of the most consequential habits a young cruiser can build:

- **Total height** — to the very tip. It sets the top of the taper curve, and it is the height the growth engine grows.
- **Bole (merchantable) height** — to the top of the usable stem, where the logs stop. It bounds today's merch volume on a merch cruise.

For cruise volume, Longview uses what you gave it: if a tree has only a total height, that also serves as the merch top (a conservative, whole-stem read); a recorded bole height always takes precedence for the merch top. But the **Growth module reads total height** — FVS grows the entire tree and derives the merchantable stem back out of it.

So the mistake to never make: recording a merchantable-top height in the total-height slot. It tells Longview the tree ends where the good wood ends, which shortens the stem — under-voluming it today and, if it's grown, starting the projection on a tree that's too small and growing it wrong. Measure total height to the tip. This matters on every cruise and is non-negotiable on an inventory, which is usually collected to be grown.

Site and age trees

Mark site trees in the SITE view (mobile) or the Primary screen (desktop) with breast-height age and height. Longview computes each tree's Douglas-fir site index using King's 1966 curves — the standard for west-side DF — and averages the site trees within a type into the type's site index. Age classes (the 1–9 slots on the type) let a one-digit code on any tree carry a full age, so age-dependent calculations have what they need without typing three digits per tree.

What the volume engine does with a measured tree

For each measured tree, Longview builds a stem profile from DBH, form point, form factor, and the recorded heights, then scales each bucked log's small-end diameter off that profile. Board feet come from Scribner rules applied log by log; cubic feet from the frustum of each log. Defect entered on a log (length, internal, or percent) nets it down. The result: the numbers you see in the field on the device and the numbers in the office report agree, because both run the same calculation — and a merch cruise and an inventory of the same stand reconcile, because after the logs exist (bucked in the woods or at the desk) the scaling is identical.

Reading the statistics

- **CV (coefficient of variation)** — how variable your plots are, as a percent of the mean. Timber types commonly run 20–80%; higher CV means more plots for the same confidence.
- **SE (standard error)** — how tight your per-acre estimate is, as a percent. The working rule: SE shrinks with the square root of plot count, so halving your error takes four times the plots.
- The Statistics view on the device gives you both live, per type — check it before leaving the unit, and add plots where the CV says the ground is messy.

Part 7 — Care & feeding

Where your data lives

- **Desktop** — each project is a folder (the .osspace file plus its Backups) in Longview's Projects folder in your home directory, unless you chose another home when creating it. Copy the folder, and you've copied the project.
- **Mobile device** — working data lives in the app's protected storage; the backup copies live on your memory card and/or cloud folder (Parts 2 and 3). The backup file is the recovery path — keep one configured.

A sane backup habit

- On the device: set up the memory-card backup the day you install. Add the cloud folder if the device ever sees signal.
- On the desktop: auto-backup is on by default — leave it on. Archive finished jobs as .ospkg so the backup history travels with the archive.
- Send cruise files in promptly. A cruise that exists on the device and the desktop is a cruise that survives either one failing.

If something goes wrong

- **Lost or broken device** — install Longview Field on the replacement, open Backup & Restore, and restore from your memory card or cloud folder.
- **Bad edit on the desktop** — Undo first; for anything bigger, open Restore and peek into a rolling backup from before the mistake.
- **A report looks wrong** — check the active tables first (the badge at the top right): a cruise calculated against the wrong sort/grade table is the most common cause of surprising numbers. Longview's prompts exist to make that choice visible.

System requirements

Desktop — Mac	macOS 12 (Monterey) or later · Apple Silicon (M1 or newer) · 4 GB RAM (8 GB recommended) · ~500 MB free · no internet required
Desktop — Windows	Windows 10 or 11, 64-bit · 4 GB RAM (8 GB recommended) · ~500 MB free · no internet required
Mobile — Android	Android 5.1 (Lollipop) or later · ~50 MB plus room for cruise data · fully offline · iOS planned

Longview is in active beta. If something in this guide doesn't match what's on your screen, or the app does something this guide didn't prepare you for — tell us. That feedback is what betas are for.