Wisconsin's EAB Forest Management Guidelines – An Update

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Emerald Ash Borer and Forest Management

Revised May 2014

The emerald ash borer (EAB), *Agrilus planipennis*, is an exotic insect (Figure 1) that was first identified in southeast Michigan in 2002. EAB kills all true ash species (*Fraxinus* spp.) that are native to Wisconsin, and even healthy ash trees decline and die within a few years of becoming infested.

Fig. 1. EAB adult, actual size is ½".

EAB has been detected in Wisconsin. In 2008, EAB was detected in Ozaukee and Washington Counties. Since then, EAB has been found in many areas, and numerous counties are quarantined (Figure 2). EAB has also been found in numerous states and Canadian provinces. A current distribution map is available at: www.emeraldashborer.wi.gov.

Fig. 2. Counties in red are quarantined for EAB as of May 2014. Check for an updated map at: www.emeraldashborer.wi.gov.

Regulatory Considerations

Generally, state and/or federal quarantines follow a confirmed EAB find. The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and the USDA Animal Plant Health Inspection Service (APHIS) determine the quarantine areas.

When an area is quarantined, it means that the following items cannot be transported out of the quarantined area:

(a) The emerald ash borer, *Agrilus planipennis* Fairmaire, in any living stage.
(b) Ash trees.
(c) Ash limbs, branches and roots.
(d) Ash logs, slabs or untreated lumber with bark attached.
(e) Cut firewood of all hardwood (non-coniferous) species.
(f) Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter (in two dimensions).
(g) Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

A 'Compliance Agreement' may be obtained from DATCP or APHIS to allow movement of these articles out of a quarantine area as long as measures are taken to prevent the spread of EAB. Gypsy moth quarantine restrictions may also apply. For a current list of quarantined counties and regulations, visit the Wisconsin EAB website, www.emeraldashborer.wi.gov.

Response Considerations

Each infestation will evaluated to determine the most responsible and reasonable course of action, based on the most scientifically sound information available at the time. Where appropriate, Native American

Current Guidelines - Non-Quarantine Counties

Ash Minor Component (<20% stand basal area):
- standard management for cover type
- ash less desirable, but not high risk
- keep good form and vigorous ash

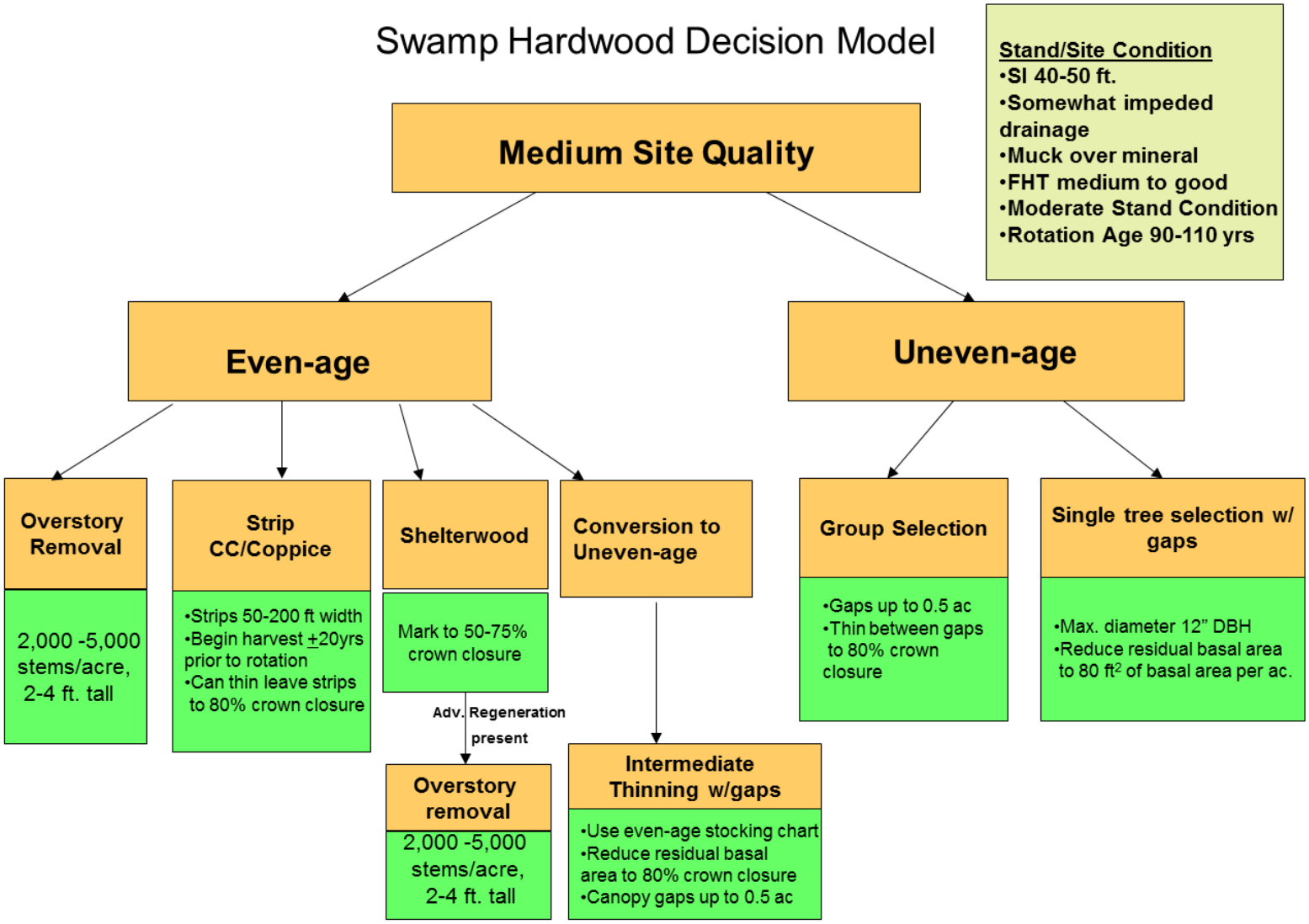
Ash Medium Component (20-40% stand basal area):
- reduce ash proportion with regular stand entries
- goal of less than 20% of stand basal area in ash

Ash Major Component (>40% stand basal area):
- reduce ash proportion through multiple entries
- goal of less than 20% of stand basal in ash
- or convert to other species (early rotation possible)

Current Guidelines - Quarantine Counties or Within 15 Miles

- conduct pre-salvage/salvage harvest of ash
- residual stocking above C-line or >40 crop trees (AGS)
- residual stocking below C-line or <40 crop trees (AGS)
- special consideration for lowland stands

Wisconsin Silviculture Handbook - Swamp Hardwood Chapter



Swamp Hardwood Silviculture Trials Study

- 29 documented swamp hardwood silvicultural trials in WI

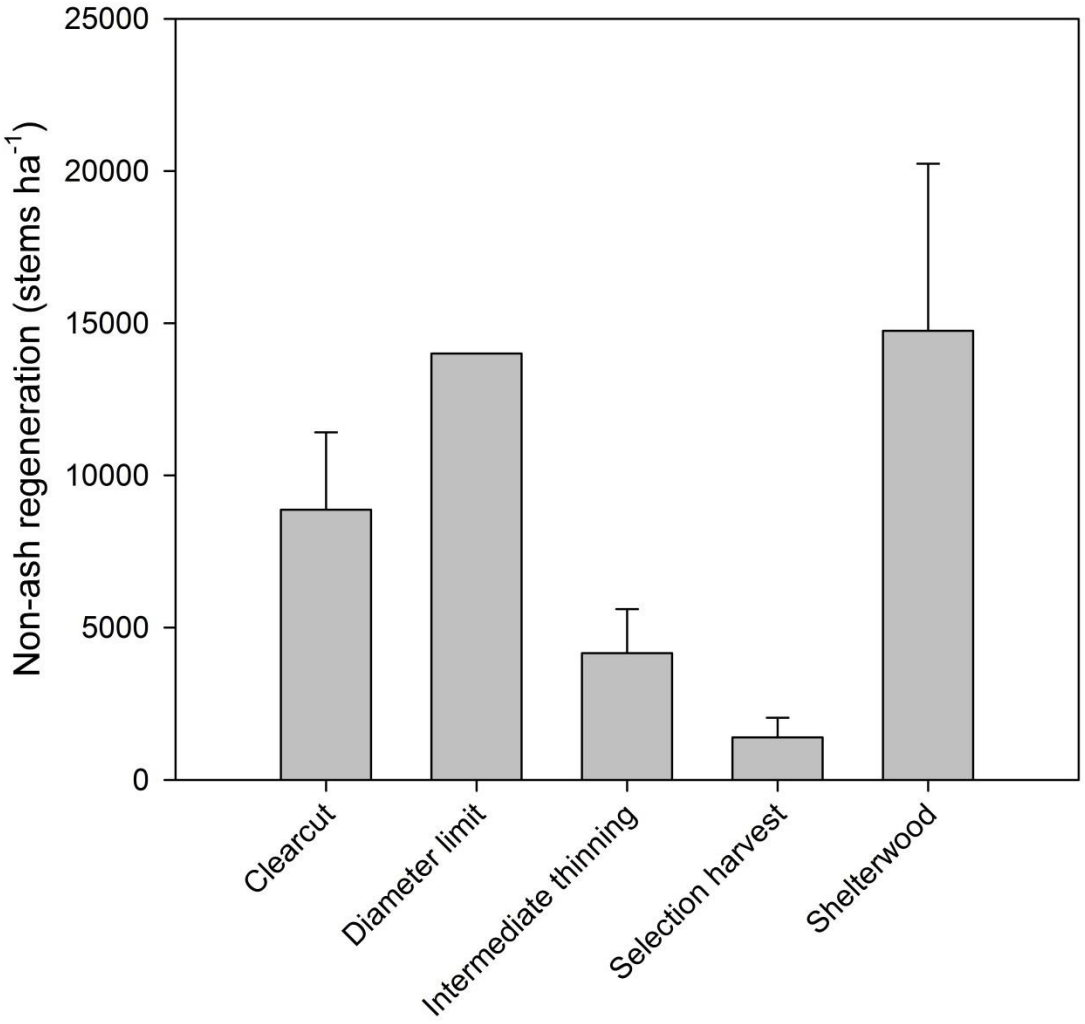
http://dnr.wi.gov/topic/forestmanagement/silviculturetrials.html

- 2015-16 - Partnering with University of Minnesota to further monitor and analyze a series of silviculture trials around the Great Lakes

Swamp Hardwood Silviculture Trials Study

Key	Stand	Prescription	County
1	SH01	Shelterwood	Oconto
2	SH02	Intermediate thinning	Oconto
3	SH03	Intermediate thinning	Oconto
4	SH04	Shelterwood	Chippewa
5	SH05	Intermediate thinning/salvage	Chippewa
6	SH06	Strip Clearcut	Iron
7	SH07	Strip Clearcut	Iron
8	SH08	Salvage	Sawyer
9	SH09	Partial strip cut and thinning	Sawyer
10	SH10	Diameter limit	Lincoln
11	SH11	Coppice with Reserves	Ashland
12	SH12	Shelterwood	Ashland
13	SH13	Intermediate thinning	Washburn/Sawyer
14	SH14	Strip Clearcut	Price
15	SH15	Strip Clearcut	Price
16	SH16	Selection harvest	Price
17	SH17	Strip Clearcut	Price
18	SH18	Selection harvest	Price
19	SH19	Strip clearcut	Price
20	SH20	Intermediate thinning	Oneida
21	SH21	Selection harvest	Washburn
22	SH22	Diameter limit	Washburn
23	SH23	Strip Clearcut	Washburn
24	SH24	Clearcut	Washburn
25	SH25	Strip Clearcut	Marinette
26	SH26	Clearcut	Sawyer
27	SH27	Single tree selection with gaps	Oneida

Swamp Hardwood Silviculture Trials Study



Non-ash regeneration densities on treatments year 2000 and later (Pszwaro and D'Amato, unpublished).

Swamp Hardwood Silviculture Trials Study

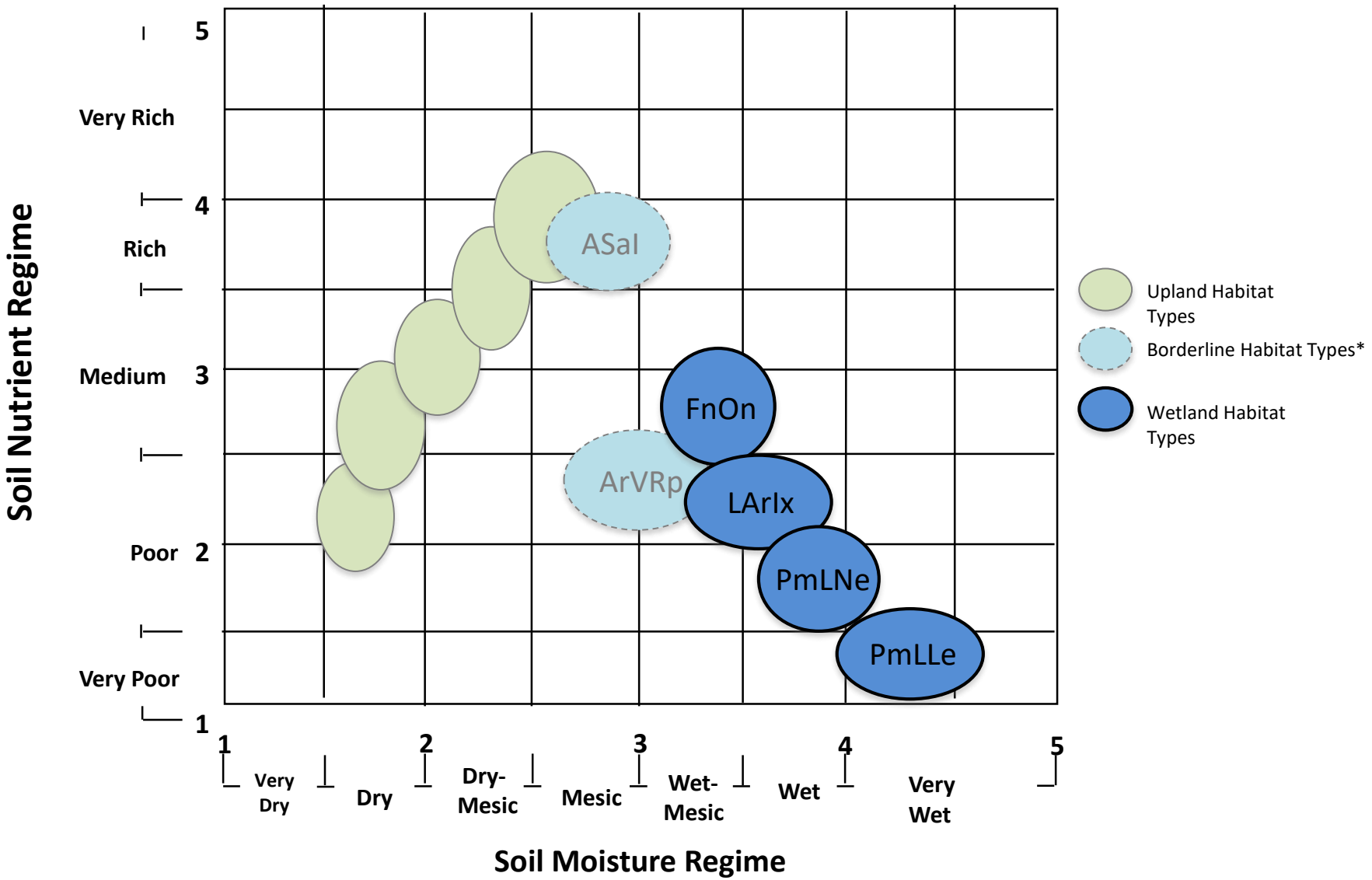
Iron County – 50’ strip shelterwood

Two years later…

Field Tool

Kotar's Wetland Forest Habitat Type Classification System for Northern Wisconsin

Relationship of Habitat Types to Soil Moisture and Nutrient Regimes in Region 1



Field Tool

Lowland Ash Stand Decision Model

WDNR DRAFT WDNR DRAFT WDNR DRAFT

Checklist for Evaluating Lowland Ash Stands in EAB Quarantined Counties or within 15 Miles of a Known Infestation (v5.0):

Landowner:	**County:**	**Town:**
Section-Town-Range:	**Cruiser:**	**Date:**
Compartment:	**Stand:**	**Acres:**

SITE QUALITY and/or TIMBER SALE OPERABILITY:

Poor -

- ☐ Lowland FHT – very poor to poor (Habitat Type:_____)
- ☐ SI < 40 ft.* (SI Species / Site Index: _____/_____)
- ☐ Drainage Class – very poorly drained
- ☐ Soil – deep organic/sphagnum bog
- ☐ Vigor – Poor tree and stand vigor
- ☐ Timber Sale Volume – limited (<100 cords or 10 MBF)
- ☐ Access - poor

Medium to Good –

- ☐ Lowland FHT – poor to rich(Habitat Type:_____)
- ☐ SI > 40 ft.* (SI Species/ Site Index: _____/_____)
- ☐ Drainage Class – poorly drained or better
- ☐ Soil - non-sphagnum organic or organic over mineral
- ☐ Vigor – moderate to good tree and stand vigor
- ☐ Timber Sale Volume – acceptable (>100 cords or 10 MBF)
- ☐ Crop Tree Quality - acceptable (evaluate AGS)
- ☐ Access – fair to good

* It may be difficult to obtain an accurate SI in lowland ash stands. It is not recommended to rely on SI alone for site quality evaluations.

ADVANCE REGENERATION:

Adequate –

- ☐ Non-ash, desirable species
- ☐ 2000+ stems/acre (advance + projected coppice)
- ☐ 2-4 ft. tall
- ☐ Distribution > 50% stocking

Present but Inadequate –

- ☐ Non-ash, desirable species
- ☐ 200-2000 stems/acre (advance + projected coppice)
- ☐ 2-4 ft. tall
- ☐ Distribution < 50% stocking, grouped

No Potential –

- ☐ Mostly ash or undesirable species
- ☐ <200 stems per acre (advance + projected coppice)
- ☐ < 2 ft. tall (e.g., 1st year germinants)
- ☐ Distribution – limited

POTENTIAL EAB IMPACT TO STAND CONDITION:

Non-Degraded –

- ☐ > 40 non-ash AGS (Acceptable Growing Stock) per acre or > 45% relative density of non-ash AGS

Degraded –

- ☐ < 40 non-ash AGS per acre or < 45% relative

ALTERNATE SEED SUPPLY:

Good -

- ☐ 5-10+ non-ash AGS/seed trees per acre
- ☐ Dominant or codominant crown class
- ☐ Reproductively mature
- ☐ Dispersed or grouped

Poor -

- ☐ <5 non-ash AGS/seed trees per acre
- ☐ Intermediate and suppressed crown classes
- ☐ Reproductively immature
- ☐ Poorly distributed

HERBIVORY:

Low –

- ☐ Browse intensity index 1-3

High -

- ☐ Browse intensity index 4-6

HYDROLOGICAL RISK:

Low –

- ☐ Seasonal inundation of limited duration (< 60 days)
- ☐ Depth to water table > 30cm during majority of growing season
- ☐ Ponding infrequent
- ☐ Drainage Class poorly drained or better, convex surfaces, water flow present
- ☐ Organic over mineral soils

High –

- ☐ Seasonal inundation common, well into growing season (> 60 days)
- ☐ Depth to water table < 30cm during majority of year
- ☐ Ponding frequent
- ☐ Drainage Class very poorly drained, concave surfaces, limited water flow
- ☐ Deep organic soils / sphagnum bog
- ☐ Impeded drainage due to roads, culverts, other impounding factors

INTERFERING VEGETATION:

Low –

- ☐ <25% coverage
  RCG, buckthorn, alder, other _____

High -

- ☐ >25% coverage
  RCG, buckthorn, alder, other _____

STAND COMMENTS:

Take-Home Points:

1) Careful stand assessment is critical, especially hydrology risks of lowland stands
2) Prioritize stands – consider EAB infestation timeframes
3) Focus on regenerating lowland stands sooner rather than later
4) Maintain/promote non-ash seed sources


Any questions?
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